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Address

THE MEDICAL PROFESSION AND THE ISSUES WHICH CONFRONT IT.

PRESIDENT'S ADDRESS AT THE FIFTY-SEVENTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION AT BOSTON, JUNE 5-8, 1906.

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The American Medical Association begins its fifty-seventh Annual Session under the most auspicious circumstances. After an interval of forty-one years it again meets in Boston, the guest of this great commonwealth which has ably upheld the highest medical traditions since the founding of New England.

Another cause of felicitation: The sectional differences in New York have been overcome and the Empire State, for the first time in twenty-five years, presents a unified delegation.

The House of Delegates of the American Medical Association (which technically is the American Medical Association) represents directly about 55,000 and indirectly the 120,000 regular practitioners of medicine in the United States. The official organ, THE JOURNAL, reaches each week over 43,000 subscribers, and, under the able editorship of Dr. George H. Simmons, has become the leading professional magazine in the world.

The medical profession is to be congratulated on these evidences of a useful organization, but much remains to be done. In his individual capacity the medical man has not been found wanting. Go where you will in civilized lands, you will find the physician self-sacrificing, patient and charitable, upholding the honor and dignity of his noble calling. Collectively medical men do not have the influence which we might expect and without which great movements for the welfare of humanity can not be carried on. A lack of unity has prevented a realization of our hopes, and if we are to gain and maintain the pre-eminent position to which we are entitled we must unite for the common good.

The present organization of the American Medical Association is but a beginning: we must further the interests of this body unselfishly, not for ourselves alone, but that we may better fulfill our sacred obligations to mankind. The people must be educated up to a point where they can understand the broad humanitarianism of modern medicine. Society appreciates the saving of a sick person's life by the skilled physician, but fails to see the priceless gifts to the human race made by preventive medicine and sanitary science. It views everything in detail and misses the perspective. We have failed to secure the support of the mass of the people to much-needed sanitary reforms, because we have appealed to them as one individual to another without the weight of an authoritative organization.

That the people are ignorant of medical affairs is due to bad education rather than prejudice. They are more than two decades behind advanced medical thought; it is our duty to keep them better informed. The theory of medicine did not contain the essential principles of a science until within the last quarter of a century. Originally a part of priestcraft, the profession had its beginnings in a time of mysticism and superstition. Anatomy, gross pathology and chemistry were among the early foundation stones which made progress possible. Clinical treatment was based on a very few specific remedies and a considerable number of drugs of proved value in the cure or alleviation of disease. But, lacking a sound theory of causation, the results were not much better in the average self-limited malady than those claimed by the various "systems" based on the giving of inert or useless remedies which, like the incantation of the Indian medicine man, kept the patient and friends interested until cure came about through natural processes. The public found that the large majority of sick persons got well under any, all or no treatment, and, not rightly understanding the reason, have never been able to comprehend why one method or form of treatment, as long as it apparently yielded about the same average of results, was not as good as another.

The germ theory promulgated by Pasteur and given surgical significance by Lister, strengthened our foundation by adding to it the long-sought-for causation of the majority of diseases, and this, with the aid of experimental research, has led the practice of medicine out of the wilderness and established it as one of the exact sciences.

New and fundamental truths have followed each other so rapidly that we have scarcely been able to digest them and much less can we expect the public to have kept pace. The layman's view is that of twenty-five years ago. He accepts with avidity new dogmas and "pathys" based on theories incredibly foolish in the light of modern investigation, and we have allowed him to become fixed in these beliefs. We have permitted the public to be educated by "patent-medicine" advertisements and the voluble charlatanism of the commercially interested. In return we are classed with these schemers, and efforts for the general good are believed to be selfishly inspired.

The Utopianism of our profession is too idealistic for ready comprehension in this commercial age. The time has come for the public to be taken into our confidence; if we wish better results we must enlighten the people, for with them lies the final word.

THE PROFESSION AND THE PUBLIC.

General sanitary matters of the greatest importance are becoming understood through medical influences. The public has been and is being educated in regard to the "great white plague," tuberculosis, and statistics are beginning to show the effect of this diffusion of knowledge. In Massachusetts and some other states a committee has been appointed in each district to promulgate measures for the relief and control of tuberculosis. This should be imitated in every state in the Union.

We can already see the good which has resulted from the teaching of the habits of mosquitoes, the short distances they travel from their breeding places, and especially the necessity for the quarantine of patients afflicted with yellow fever and malaria, not directly to protect mankind, but to prevent infection of the little pests who act as carriers of the contagious micro-organisms.

Society must be taught the early symptoms of cancer, the greatest foe of humanity, that its manifestations may be recognized while in the curable period. A propaganda of this kind, inaugurated by the profession of Germany, has borne fruit.

The typhoid-fever crime of cities through polluted water supply is not the least of the many branches of popular education. There is no reason why a man who has become infected with typhoid from a city's neglect should not sue for damages as he would for personal injury sustained from falling through a defective sidewalk. Unavoidable sickness is bad enough, but when we stop to consider that the life of the individual is worth $5,000 to the state, and that those who recover undergo great disability and expense, the continuance of unsanitary conditions is criminal. The experience of Vienna, which was converted from a typhoid center to one of freedom from such outbreaks by bringing in a pure water supply, has now been repeated over and over again in every civilized land. Yet hundreds of deaths from this preventable source yearly attest that the lesson has not yet been learned.

How can the work of education be best continued? The answer, as shown by our very efficient chairman of the Committee on Organization, Dr. J. N. McCormack, is through the local society. Occasional meetings to which the public shall be invited must be devoted to questions of general interest, and the proceedings published in the local newspapers. The county society must become the unit, and the allied professions of pharmacy and dentistry urged to attend and take part in the deliberations.

To the *Ladies' Home Journal* and *Colliers' Weekly* the public owe the successful crusade against poisonous substances and intoxicating beverages which are sold under the guise of "patent medicines," patent only in the sense that the name is copyrighted; the constituents can be changed at any time and in any way.

Do you think that our American mothers will continue to give "Kopp's Baby's Friend" and "Mother Winslow's Soothing Syrup" to their babes when they find that these mixtures contain opium and that instead of securing rest the little ones are narcotized and that many deaths are directly attributable to this cause?

Will the American people continue to use Bromo Seltzer and similar dangerous preparations to an extent which causes them to exhibit blueness of the skin surfaces from poisonous coal-tar products, or become victims of drug habits from cocain catarrh cures, when they discover the harmful and dangerous character of these agents?

Will our prominent people, statesmen, politicians, ministers and ladies of note continue to allow their photographs over signed testimonials to be published, telling their fellow-citizens how much better they have felt after taking Peruna, Warner's Safe Cure and the various Nervines and Tonics, when they find that most of these preparations depend on alcohol for the stimulating effects which they describe? The success of most "patent medicines" depend on the fact that they contain drugs and stimulants which create a craving and must be repeated Once get the public conscience awakened and we will have a demand that every "patent medicine," before being sold, shall have its exact component parts printed on its label, and its claims to cure verified by scientific investigation. The action of the Postoffice Department in denying the use of the mail service to some of the worst offenders against common decency is to be commended.

PUBLIC HEALTH LEGISLATION.

One of the few misfortunes of the individual freedom afforded by a republican form of government is that it enables the most ignorant man, through prejudice, to interfere with and delay needed legislation, with the result that, by the time the law can be passed, the immediate object to be obtained has often disappeared.

In Germany compulsory vaccination has practically caused smallpox to disappear from the army and country, a person properly protected being immune. In the state of Minnesota inability to enforce vaccination in the late smallpox epidemic permitted, from a few sources, 27,876 persons to become infected with this disorder; all due to a small but vociferous band of anti-vaccination agitators.

Contagious disease in any place is not a matter of local or state interest alone, as the ease and freedom of transportation render local control impracticable and properly place it in the hands of the general government.

The keenness with which the American people are watching the affairs at Panama argues well for the future. The communication of Dr. Charles A. L. Reed awakened public interest. His portrayal of red tape and obstruction to sanitation in the Canal Zone has resulted in obtaining for that most able army medical officer, Colonel Gorgas, power to carry out the necessary reforms and has made the Canal Zone the most sanitary place in Latin America.

Compare our record in the Spanish-American War with that of the Japanese in the war with Russia. We had 14 deaths from disease to 1 from wounds and more than 95 per cent. due to disregard of the simplest problems in sanitation—therefore, unnecessary and avoidable. In the Japanese army there were 4 deaths from wounds to 1 from disease, a difference of 56 to 1. This was not due to the fact that the Japanese had superior knowledge, but that their medical officers were thoroughly organized and in sanitary matters were supreme. The knowledge which they used was obtained in western institutions and was the product of the Occidental, not the Oriental, civilization.

The army and navy medical departments have worked intelligently against overwhelming odds. Their individual members have international reputations honestly achieved. Their schools for the special training of their men are in the highest degree efficient and deserving of every praise; but the departments have been so small as to be unable to act even as nuclei about which in time of war competent forces could be gathered and the militia of our country enter into conflict fearfully handicapped. The indications, however, are that these matters will now be rectified, and if so it will guarantee to the patriotic American that should he again be called on to serve his country his enemies would be in front and that he will not be destroyed by his own side through neglect of sanitary laws.

The United States Public Health and Marine-Hospital Service has been and is doing splendid work in sanitation. Its skilled investigators have revolutionized quarantine measures and have placed preventive medicine on a solid basis. Their powers should be extended so that such unnecessary outbreaks as occurred in New

Orleans shall not be repeated. They should be given control of national quarantine in all its phases.

MEDICAL EDUCATION, STATE LICENSURE AND RECIPROCITY.

What is needed is a higher standard of requirements and more and better supervision of professional schools. The Council on Medical Education is working hard and is now in a position not only to show what should be done, but to initiate needed reforms. No more important work has ever been taken up by the profession. At the present time medical education is uncontrolled and each state has its own standard of requirements. We can not rid ourselves of dogmas and "pathys" until we can secure a universal primary law as to the minimum amount of knowledge on fundamental branches. To accomplish this the American Medical Association must co-operate with and encourage medical colleges to do better work. The profession owes it to itself to investigate in some manner what the schools are actually doing and to make it known whether or not they fulfill their obligations to the student. No well-conducted college could object to such reasonable supervision.

Another question of great importance is that of reciprocity in medical license. The conditions now are wellnigh intolerable and restrain the individual freedom guaranteed by the Constitution. The boundaries between states are imaginary lines; yet a physician on one side of a border can not relieve human suffering on the opposite side without becoming amenable to the law or subjecting himself to vexatious examinations which he has already successfully passed in his own state. This must be met and speedily by agreement between examining boards as to the minimum of requirements. After all, this is but a part of the educational problem. If we could solve this, licensing boards could at once adopt more uniform examinations and reciprocity.

RELATIONS TO INSURANCE COMPANIES, CORPORATIONS, ETC.

We come now to consider some abuses from which the physician suffers. It is a matter of professional pride that, in the general condemnation of the life insurance companies, although every other part of the control has been shown to be corrupt, no breath of scandal has touched the medical department. Yet the local examiner has the most cause of all to be dissatisfied. The New York Life, some years ago, cut the fee for examination 40 per cent., apparently not as a matter of economy, for at that time the most corrupt practices existed, but rather to enable the agent more easily to pass "new business" at any cost. This action has lately been imitated by the Equitable and some others and has resulted in forcing the resignation of many of their best examiners. The general officers have taken great credit on themselves for voluntarily reducing their salaries 20 per cent. It is a rank injustice that the one body of men who have emerged clean from the insurance scandals should suffer the most for the crimes of others. A thorough medical examination to prevent fraud by the admission of unsafe risks is essential. With few exceptions the line companies pay a fair fee and less should not be accepted. The casualty companies, such as the Maryland, are the worst offenders, and some concerted action should be taken to compel them to mend their evil ways.

Lodge practice is another scheme by which officers of an association draw salaries ostensibly to give medical services at a figure below the possible point at which a professional man can live and continue his education. The people are badly served, as competent physicians can not be secured to do the work, and the whole scheme is properly condemned by the various medical associations all over the country.

Public service corporations abuse hospital privileges in a way that is no more or less than an open scandal. In Pittsburg the steel companies pay $1.00 a day for the care of their injured men at the hospitals, and for the class of patients under discussion this can not be provided for less than $1.60 per day. The companies pay the surgeons at the hospitals absolutely nothing for their services to its injured, which amount to thousands of dollars a year. The same condition exists with many of the large railroad and street car companies and other public corporations.

Hospital abuse by patients who are able to pay, through the neglect and indifference of the trustees, is prevalent, and thereby the profession is robbed of just returns for labor and the funds of charitable persons misused to an extent which is almost beyond belief. All hospitals should have competent individuals whose business it is to see that no one secures free treatment who is able to pay.

Some great hospitals go still further and receive any patient, rich or poor, allow him to have a suite of rooms and bath and several nurses if he can pay for the same; but will not allow him, even if he is willing to do so, to pay the surgeon who operates on or the medical man who takes care of him. If the patient is disposed to be more just than the trustees of the hospital, he can do so only by giving a gratuity at Christmas, as would be done with a servant. Such indignity should be resented by every right-feeling man.

It is a misfortune that the large majority of hospitals have no physicians among their directors. Hospital management is often extravagant and wasteful, due to official influence in furnishing comfortable berths for incompetent relatives or unfortunate friends in some salaried executive position.

Fortunately the list of grievances is not large, and I believe that they can be harmoniously adjusted if taken up with the proper authorities in a conciliatory spirit. Our first object must be to see that no poor person shall be subjected to the slightest inconvenience or annoyance and that every worthy charity shall have our united support; but we must look to it that the charitable practitioner's time, knowledge and skill shall not be misused.

THE PRACTICE OF MEDICINE AS A BUSINESS.

It is a hard matter to adjust the financial side of the practice of medicine; that doctors are poor collectors and bad investors is a notorious fact and makes them the easy prey of the various investment "gold bricks." A physician owes it to himself, to his family, to his profession, and especially to the community at large, to manage his finances well. Otherwise he can not pursue his studies and give to the sick his best efforts, which they have a right to expect and demand. No sensible man enters on a medical career with a view of making money. I have never known a physician who has become rich solely from this source, and it is better so, for beyond that reasonable competence which leaves him free to pursue his life work the care of money interferes with the highest aims of the true physician, and few who have been burdened with wealth have reached their ideal in a calling which makes no distinction between the rich and the poor.

One of the demoralizing tendencies in this commercial age is the money standard of success. Physicians are not called or chosen; accident or environment brings about their choice of profession. While professional life

broadens the mental horizon and increases sympathy, it can not change man's nature, and men who are unfair in business affairs are to be found in our midst.

The one crying evil, which fortunately is not widespread, is the giving of commissions—in other words, the selling of the confidence which the patient has in his practitioner—to some specialist who will divide the fee in return for reference of the case. The one secretly takes money from the patient without his consent, and the other, in order to complete the bargain, charges more than he should. This is equally harmful to the one who receives and to the one who gives. Such matters can not be kept secret, and I have personal knowledge of men of good attainments and remunerative practice who have been ruined through losing the confidence of their communities by this pernicious traffic. Some attempts have been made to justify it, but the very fact that it is secret shows that both parties are ashamed to have it known and is an acknowledgment of its moral obliquity.

Our relations with the allied profession of pharmacy are not on as ethical a footing as they were twenty years ago. Then the druggist was the faithful friend of the physician. To-day, in putting up from 50 to 60 per cent. of the prescriptions sent to him, the educated pharmacist can not use his skill as a chemist, but simply acts as a distributor of copyrighted preparations which the physician calls for a few times only to take up with something new and leave the shelves of the druggist filled with the unused remnants.

Many physicians compound their own prescriptions, to the detriment of the pharmacist. The proprietary medicine people have managed this very cleverly; to the medical profession they are continuously calling out that the druggist is "substituting;" with one hand they have given the physician remedies to dispense himself, and with the other furnished the druggist with "patent medicines" with which to compete with the physician, and these two natural allies have drifted apart. The average pharmacist can not live on physicians' prescriptions alone, but he should be treated justly, and both physician and druggist would profit by mutual concessions to the great benefit of the public.

The higher grade of pharmaceutical houses already see the danger to honest pharmacy in the forced promotion of "ethical" and fake nostrums under catchy names, and it is to be hoped, in the future, will confine themselves to the open compounding of legitimate preparations; and these and these only should be found on the advertising pages of reputable medical journals.

MEDICAL PROGRESS.

Graduation from a college is merely a commencement of a life study of medicine. Therefore, young men without special training under competent teachers should not be encouraged in wanton assaults on major surgical diseases unless justified by necessity. The future will demand schools for advanced training for those who desire to do special work.

The recent graduate in medicine should begin in his county society by contributions to the newer methods which will be interesting to the older men. This should be his kindergarten; from there he will carry his papers to the district meetings; and at the end of five years he will be competent to bring useful material to the state society and later to the sections of the American Medical Association.

In the practice of medicine the student days are never over. There is so much to be learned that a long and industrious life leaves one with the feeling that he is but a beginner. The most important habit a young physician can form is the "daily study habit." Let him put in even one hour a day with the reading of journals and books of reference and much can be accomplished. He should keep an account of the time, and if something interferes for a day he should charge himself up with it. A two weeks' vacation means fourteen hours to be made up. Most men can do more, and no man has a right to do less, no matter how busy he may be. The leaders in our profession make a daily average of five or six times this amount of study the year round, in addition to the demands of an active practice.

The practitioner must make frequent trips away for the purpose of observation. In no other way can he avoid the rut of self-satisfied content, which checks advancement and limits usefulness. No amount of diligence as a student can take the place of personal contact with men in the same line of work.

What are the rewards of so laborious a life? They can not be measured, because there is no standard of comparison. To realize that one has devoted himself to the most holy of all callings, that without thought of reward he has alleviated the sufferings of the sick and added to the length and usefulness of human life, is a source of satisfaction money can not buy. I know many a man grown gray in the profession with little of a tangible nature to show as a result of his work, but who is not only contented with his lot, but proud to have served in the ranks, and who looks back on a life of privation and hardship for the benefit of humanity as a privilege which he is thankful has been vouchsafed him.

Let us continue to strive as individuals for the honor and dignity of our profession. In this we but follow out the aims and ideals of those who have gone before and prepared the way. But the great movements of the future can not be brought about by individual action. They must be initiated and controlled by united effort, and in no other way can the epoch-making truths of preventive medicine be made to bear fruit. Unity is the spirit of the times; it marks the difference between the old and the new.

The vital need of the medical profession is a harmonious organization—an organization that will encourage right thinking and good usage among ourselves, help to secure needed medical reforms, compel redress of grievances and promote and encourage the highest interests of its individual members; and in this lies the future usefulness of our profession as a whole.

Orations

THE NATURE AND PROGRESS OF MALIGNANT DISEASE.

ORATION ON SURGERY AT THE FIFTY-SEVENTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, BOSTON, JUNE 5-8, 1906.

JOSEPH D. BRYANT, M.D.

NEW YORK CITY.

My first words are words of thanks, profound and sincere thanks, addressed to my colleagues of the American Medical Association because of my estimation of the high honor conferred in inviting me to address you on this occasion. My first desire, the dominating desire of earnest appreciation, is that I may say something that will justify the choice of my colleagues and my presence before you. My first hope, the fond hope which I most cherish at this time, is that some one who may be influenced by what I shall say will gain in comfort and

life thereby; for, be the gain but little, even then those who are accessory to my presence may claim acquittal because of it.

Since it may not be known to all here present, I am prompted to say at once that, some time during the course of the meeting of this Association, an address, denominated "An Oration on Surgery," is a part of the scientific proceedings. In this instance it is not my intention to attempt a review of the whole field of surgery, nor even of a year's experience, but, instead, to devote the brief time given me to the consideration of a surgical topic which to-day is engrossing more of the time and energy of scientific medical endeavor than is any other subject in the entire range of surgery. Hence the topic of the evening, "The Nature and Progress of Malignant Disease."

It seems not unfitting, in a city whose early resistance to the oppressive encroachments on human liberty awakened the demand for American freedom, that an earnest warning should be voiced against the advancing encroachments on human comfort and life of a malevolent disease which obviously afflicts with dire results, all classes of vertebrate beings. The expression, malignant disease, is used here in the general sense, just as later the term cancer will be employed. It is better thus than to attempt to speak of the varieties of malignant disease, since only a general idea of its nature and progress can be considered in the comparatively short time allotted for the purpose.

Cancer is a general and not a local variety of disease. The field of its activity is quite as extensive as is the world itself. The vertebrate order of creatures is more or less afflicted with cancer throughout the entire classified series. The highest vertebrate orders of life suffer from cancer more than do all other orders combined. The civilized and the domesticated classes of higher rank suffer more from this form of infliction than do those of lower rank, or of the natural state. Mankind everywhere pays distinctive vital tribute to this disease; not, however, in equal proportions, but in accordance with the standard of the civilization of which he is a part. The higher the standard the greater is the contribution to malignant fate; the humbler and more natural the standard the less onerous is the demand. The rulers of mighty nations and the humblest human factors of savage existence, each in their respective ratios, succumb to the mysterious lethal influences of cancer. Also fish and flesh, staple articles of food of man, each in a varying measure, is the abode of malignant action, and more especially is the latter class thus afflicted. The fish of pure streams and ponds and those of salty habitations are in no small degree the subjects of cancer. The genteel trout and the beneficent cod are examples of this fact, respectively. Even the invertebrate oyster in one instance is widely reported to have yielded to malignant change.

The myriads of oysters subject to the scrutiny of hosts of gustatory and scientific observers for many years, with apparently but one reported instance of malignant disease under all of these circumstances, suggested to us the idea of reviewing the facts in this particular case. A careful examination was made, therefore, of the acknowledged record[1] of the case the recital of the chief points of which merits your indulgence at this time. It appears that the late Professor Leidy, the famous anatomist of Philadelphia, came into possession of an oyster having a large tumor of the soft parts which he presented to the late Professor Ryder in January, 1887. In commenting on the growth at that time Professor Ryder spoke as follows: "The tumor seems to have been benign in character, as the oyster in other respects appears to be healthy." A description of the tumor of quite minute and apparently of microscopic kind is reported along with the above statement, which is now regarded by competent authority[2] as being congenital, thus sustaining the belief in benignity expressed by Professor Ryder at the outset.

I consider it proper to enter thus fully into the merits of this specimen, since, for some reason, it has been regarded as the first and perhaps the only proof of malignant invasion of invertebrate life. We will now return to the main channel of the discourse.

The flesh of cows and oxen is the seat of cancer in the unsuspected proportion[3] of 2 per 1,000, as is revealed by the careful inspection of their slaughtered products. The young animals, however, of divers kinds, exhibit no such evidence under these circumstances.

Advanced age, both real and comparative, sets the pace of malignant progress, especially in mammals. Real age numbered by many years, and comparative age numbered by fewer, each alike invites the presence of cancer. And, too, in tissues of the human body this same age peculiarity is noted, those whose life's duty is ended, whose full years of usefulness are reached, become the frequent prey of cancer, while other contiguous tissues endowed with later function and those of the body at large remain in a healthy and useful state. In this connection it may be said that youth and youthful tissues comparatively seldom hold communion with cancer.

For a long time the solution of the problem of malignant disease has been uppermost in the minds of many of the best students of pathologic phenomena in the medical world. During the last few years the efforts directed to the solution of the mystery of malignancy, stimulated by the thought of the possible parasitic nature of the disease and the apparent increase in its extent and activity, have been markedly extended through the logical efforts of special commissions established for the purpose. Commissions organized under the patronage of crowned heads and public dignitaries of exalted station, and conducted by medical and lay minds of superlative attainment, supplemented by unlimited opportunity and ample financial support, are searching the animal world in the effort to shed light, beneficent light, on the mystery of cancer. In England and Germany especially, the resources of the governments and the sympathetic support of the King and the Emperor, respectively, are directed to the benevolent purpose of determining the origin and the true nature of malignant disease. Also in this country notable institutions of learning are patiently engaged in the efforts to accomplish the same purpose. Individuals of eminent attainment are of themselves fighting in the battle along lines of their own selection with the same object in mind. Laymen of munificent means, prompted by humane motives or perhaps by personal dread, offer bountiful endowments for the discovery of the nature and the cure of cancer. The thoughts and efforts of the civilized world, as represented in scientific medical attainment and benevolent endeavor, are to-day mainly centered on securing the control of tuberculosis and on determining the true nature and the cure of malignant disease.

1. Proc. of the Academy of Natural Sciences of Philadelphia, 1887, p. 25.

2. Profs. E. K. Dunham and Harlow Brooks.

3. Imperial Cancer Research Fund (Bashford).

It is proper to say, I believe, that the widely separated instances of cancerous infliction as noted between the civilized and barbarous peoples, between the dwellers in the flesh and salt media, and between the lower classes of mammals seem to indicate forcibly that the circumstances of human life in the civilized state have not given origin to cancer, although they may have added much, indeed, to its frequency.

That cancer is a distressing part of the history of the animal kingdom can not be gainsaid. And, unfortunately, the more comprehensively and critically the investigations relating to it are carried forward the more widespread it appears to be. As already expressed, mankind in the civilized and also in the undeveloped condition suffers from cancer, and it is probable that no race or condition of the human family is entirely exempted from this infliction. Also no organ or tissue of the human body is entirely free from its visitation. The dumb companions of man are similarly afflicted, but in a less degree, and it is altogether probable that as the search progresses along the various lines of animal existence malignant manifestation will appear now and again, reminding us, perhaps, that the penalty of the violation of a universal law of development of organized beings is relatively promptly enforced on the object or on the part concerned in the offense.

In this connection it is not amiss to heed the fact that experimentally and practically the transmission of cancer from man to animals or from one animal to another of different species has not yet been successfully witnessed beyond gainsay, notwithstanding the repeated attempts to attain the purpose and the results of long critical observation. On the contrary, the apparent transmission of cancer between animals of like species and its unquestionable extension by metastasis in those already afflicted is of common knowledge.

The vegetable kingdom suffers at times and in isolated places from a form of local progressive disease apparently akin in nature to the malignant characteristics of the animal economy. In fact, the realization that these peculiar vegetable afflictions were caused by a parasite in many instances prompted the renewed suggestion on the part of Hutchinson that similar appearing growths of human origin might later be found to depend on the presence of parasites. Since that time, more especially during the last fifteen years, the contention in this respect between the supporters of the parasitic and non-parasitic ideas regarding this disease has been continuous and spirited, and as yet without a generally satisfactory conclusion.

It is no part of the purpose of this address to discuss the various theories relating to the nature of the inherent cell activity characteristic of cancer, or of any other form of malignancy. To the members of the medical profession here present such a course would necessarily be inconclusive and disappointing. To those of the lay order whose feeble hold on technical expressions would present insurmountable difficulties of appreciation the result would be the same. Moreover, the chief aim of this discourse would be missing and, besides, as is expressed in a well-known play:

> "The result is a very pretty quarrel as it stands;
> We should only spoil it by trying to explain it."

The period at which this contention will be ended is too uncertain to merit other than hopeful anticipation, and too important to be neglected in any respect in opposing malignant advance.

The time when malignant disease first appeared in the path of human existence and added its insatiate affliction to the burden of human suffering can not be stated except in a general way. It is fair to presume, however, that at a definite period of early recorded time malignant activity in some form was present and contributed its portion to the physical distress of the age. But it is difficult, indeed, to find ancient documentary evidence of cancer in such countries as India, China, Egypt and Greece, despite the fact that their medical literature is quite extensive, especially that of Egypt, whose medical records contain descriptions of great antiquity, comparing favorably in forms of phrase and detail with many of those of the present day. Nor can the ancient history of cancer be correctly written at this late time, as it would not be possible to distinguish between cancer and benign tumor, on the one hand, and between ulcerated cancer and other severe forms of ulcer, on the other.

The comparatively limited knowledge in diagnostic discrimination at that time, as expressed in written characters, forbids the forming of definite conclusions in diagnostic purposes. It is apparent, however, that the ancient Greeks had a very good clinical idea of cancer, as a modern Greek writer, Couzis of Athens (1903), in reviewing the past history of Greek medicine, says that the practical knowledge of the Hippocratic school was not inferior to that of his own day. The works of Hippocrates (460-370 B. C.) barely mention cancer, stating in connection with the treatment that "deep-seated forms are best untreated, for if treated the patient soon dies; otherwise he may hold on for a long time." It is not difficult for us of the present day to comprehend the full significance of this statement, as no doubt a few of us, at least, have witnessed the exemplification of this ancient expression written quite 2,300 years ago. The old Greeks described fully the various distinguishing characteristics of cancer, noted the clinical differences in its various phases, portrayed quite accurately cancerous metastases and prescribed treatment not differing, especially in the palliative sense, from that in use at the present time. Galen (131-201 A. D.), in his extended works, considered cancer quite fully in its important aspects. But from his time to that of Ambrose Paré (1517-90 A. D.) little of special significance was added thereto.

Many of the notions entertained regarding the nature of cancer since Hippocrates' time seem droll to those whose enlightenment on the subject of bacteriology is a matter of recent years. The Galenic notion—probably that of Hippocrates—attributed cancer to the local effect of "overheated and unusually acrid 'black bile' that can not be purged away." Paré ascribed cancer to the effect of improper diet influencing unfavorably the liver and spleen, followed by "a shutting into the part to be attacked of thickened acrid black bile." The emotions, anger and hate, aggravated the condition, he said. Harvey (1578-1657), the discoverer of the circulation of the blood, regarded cancer as a parasite on the body, living an independent existence at the expense of the latter.

John Hunter (1728-1793) seems to have been the first to recognize the influence of traumatism as a causative factor of cancer, aided by the consequent exudation of coagulable lymph into the interstitial tissues.

Many attempts to inoculate cancer date from the experimental period inaugurated by John Hunter. And early in the nineteenth century positive results were reported and the parasitic doctrine became prevalent. The era of pathologic anatomy, which culminated in the histologic studies of Müller and Virchow, at first fa-

vored the idea of the parasitic nature of the cancer cell, but ultimately condemned it when Virchow showed, as then appeared true, that cancer cells were derived from pre-existing normal elements.

From this period to the present day, theories regarding the nature of cancer have multiplied to a bewildering extent. The two extremes at present are the following: (1) That cancer, like many other morbid processes, is due to a micro-organism; (2) that cancer represents a morbid proliferation of certain normal cellular elements as the result of diminished inhibitory action.

A few words more relative to the parasitic theory may not be amiss at this time. The view that cancer itself is a parasite was expressed by Harvey in 1651. By Dupuytren in 1805, Laennec in 1816, Cruveilhier in 1827, and Lobestein in 1829, all adopted this view as part of their teaching of pathologic anatomy. A little later the positive results of inoculation experiments were recorded, seeming to confirm the view, and Müller's description of the histologic elements of cancer in 1842 give a remarkably clear exposition of this theory, making the cancer cell the actual parasite which, if implanted in sound tissue, caused a cancerous growth. The question of transmission of cancer, however, remained unsolved, for it was then believed that cancer cells in the natural state could live but a short time outside of the body, and that their great size seemed to preclude their being taken up by the ordinary ports of entry. Also cancer did not appear on abraded surfaces, but in the parenchyma of tissues. In the face of these facts the parasitic origin appears to have languished, and to have been superseded by the later teachings of Virchow and others which derived cancer from pre-existing normal elements.

It was quite apparent at an early period of investigation that the study of the nature and activity of this disease could not shed substantial light on the problem of its control, when based alone on the few cases falling under the notice of a small number of individual observers. The logical corollary of this situation laid the foundation for statistical inquiry and collective investigation. It was not, however, until a comparatively recent date that statistical knowledge attained sufficient rank in this regard, to arouse apprehension respecting the presence of cancer. In fact, it was not until the possibility of its being of a parasitic nature was again set forth, and the fact that perhaps it was communicable, that observers of cancer were impressed with the acute sense of a new danger.

It should be stated, although perhaps superfluous, that the deductions based on statistical estimates are not always conclusive, except perhaps to the minds of those whose contentions are encouraged or supported by the calculations. A preconceived notion relative to a disease, or a prejudiced opinion regarding it, can usually gain substantial comfort from the study of plastic statistics. The product of the data may be "very like a camel," "or a weazel," or perhaps "like a whale," accordingly as a biased statistical Polonius may fancy. One has only to keep pace with the conflicting deductions often drawn from isolated examples of statistics, whether amended or not by additional knowledge, to realize the wealth of uncertainty that frequently attend statistical conclusions. Especially is this true in the instances of afflictions with subtle natures and divers environments such as characterize cancer.

The geographic and time-of-life distribution of cancer especially concern statisticians and sanitarians. The anatomic distribution appeals directly to practicing physicians and surgeons. The local occurrence-center-feature of the infection invites the reflections of pathologists and students of morphology. Geographically considered, cancer, as already stated, is a heritage of the human race in nearly all, if not in all, parts of the world. While it is yet unknown in some parts of South Africa (Snow) and other obscure places, it is not at all certain but that it exists, remaining hidden, however, from civilized view, because of the restraining influence of some heathen conception relating to it; especially as such conceptions have before this time thus controlled the doings of savage or superstitious peoples in other matters. Among the chief objections to the scientific value of statistical facts relating to cancer may be mentioned the inability to secure authentic complete diagnosis. The statement that a growth is malignant, when determined only by macroscopic examination, is so often fallacious as not to merit scientific confidence. Only microscopic reports of morbid growths should be given the privilege of membership in the rank of trustworthy data. I am aware that there are not a few distinguished observers who to-day seem to place quite as much confidence in the macroscopic findings of experience—their own experience—as in the conclusions of those with equal experience whose senses are fortified by the mechanism of a more exact knowledge. In any event such reports as these should be classed by themselves, unless confirmed by reliable microscopic testimony. According to the report[3] of qualified authority, the frequency of error thus arising is 7 per cent. in accessible growths, and for apparent reasons is increased when the growths are deep seated.

The undoubted increase in human longevity of recent time adds many, indeed, to the list of those who from augmented years fall within the age limit of cancer attack, and thus apparently increase the spread because of a seeming greater morbid activity. And, too, it should not be forgotten that many from without seek harbor in a city for the relief which its hospitals and extended experience afford, some of whom, unfortunately, add their sad contribution to the city's death rate from cancer. On the other hand, the life-saving means now employed in defending and rescuing the young from the baneful onset of infectious disease, is increasing the number of the living, and, therefore, neutralizing proportionately the apparent increase in death from cancer.

It is not impossible that the significance of the so-called "cancer localities" may be reduced to the standard of other fields of importance, when subjected to closer analyses of circumstances that are no essential part of cancer development or propagation. It is certainly evident that the slow and continuous increase of cancer, regardless of preventive measures and of human understanding is controlled by influences of such subtle kind, as thus far to perplex beyond satisfactory solution, the minds of the most astute observers.

The relative extent of cancer invasion of the accessible,[3] of the inaccessible, and of the intermediate parts of the human body in England and Wales during a three-year period affords an interesting study of this disease of great apparent significance, as will appear a little further along. Those superficial parts of the body falling readily under the scrutiny of the unaided eye and the touch of the physician are manifestly the seat of accessible cancer. Those deep and internal parts of the body, conveniently placed beyond the limits

of unaided vision or mere touch, are the sites allotted to inaccessible cancer. Those portions of the body within the reach of the finger and aided inspection are, for the most part, the sites of intermediate cancer.

The development of cancer of the parts included in each of the foregoing divisions of the body, is comparatively much less manifest in individuals under 25 years of age, than in those above that period, standing in this respect nearly as 1 to 70. The male sex suffers nearly 22 per cent. greater infliction from malignant disease than the female, during this time, which can be accounted for in part, I think, by the greater strenuousness of the male and the effect of the exposures incident thereto. The probable reasons for the greater infliction of the sexes under, than over, 25 years of age, it seems to me, have been considered sufficiently already.

The comparative difference between the frequency of occurrence of accessible and inaccessible cancer in both sexes, under and over 25 years of age is astonishing, even when proper deductions are made for the greater uncertainty of diagnosis in the latter kind. Inaccessible cancer in males of 25 years and under is 80 per cent. more frequent than the accessible kind. Inaccessible cancer in females of 25 years and under is nearly twice as frequent as accessible cancer. Inaccessible cancer in males above 25 years of age is three times more frequent than the accessible variety. Inaccessible cancer in females above 25 years of age is about 2¼ times more common than accessible cancer. Inaccessible cancer in males regardless of age, is approximately three times more frequent than the accessible variety. Inaccessible cancer in females, irrespective of age, is 2 1/5 times more common than the accessible. Inaccessible cancer is, without regard to age or sex, a trifle more than 2½ times more common than cancer accessibly located.

While it is now, and has long been conceded, that external influences, traumatic and otherwise, contribute to the frequency of accessible cancer in a greater or less degree, it is also self-evident, I think, that other and more potent agencies than these must be invoked to account not only for the occurrence of inaccessible cancer, but also for its great preponderance over those accessibly located at all periods of life, more especially the dominant one, that above 25 years of age. The increase in cancer visitation, in connection with advancing years, has long been a matter of common knowledge. But that the location of cancer, at all times of life and especially in adult life, should be of inaccessible, rather than of accessible nature, is more than remarkable, it is even startling, suggesting in no common tone the idea that, directly or indirectly, subtler influences than external traumatism or infecting agents can exercise are active in the development and spread of cancer. Perhaps it may be consistently said that the traumatisms thoughtlessly inflicted on the gastrointestinal tract by the yielding to the temptations and pleasures of life—while less emphatic than those directed to the external surface—are none the less potent for evil because of the fact that their frequent and prolonged action may increase correspondingly an ill effect. However this may be, it appears quite reasonable to some that cancer organisms coming somewhere from without, implant themselves in the tissues and develop there, notwithstanding the inhibitory effect of cooking, the power of digestion, the opposition of phagocytosis, and the fickle element of chance.

It is fitting now to remark that there appears to be no good reason to believe that the food of a people influences their relation to malignant disease in an appreciable degree.

Intermediate cancer in both sexes under 25 years of age is about half as frequent as is accessible cancer in both at the same period, possibly showing thus early in life the benign effect of protection of the intermediate parts from ordinary external influences. In the male after 25 years of age, intermediate cancer shows a comparative decrease in rate from that of the accessible form of about 32 per cent., suggesting that the evil effect of external influences are superior in potency or greater in number in the male than are those causing intermediate cancer. In the female during this period (after 25 years) the rate of accessible cancer exceeds that in the male by about 37 per cent. The intermediate variety, however, at this time in the female exceeds the accessible form by more than 48 per cent., showing the rapid increase in the intermediate variety due to pelvic disease, which can not be attributed in any practical degree to infection, but mainly to the traumatisms of maternity and the age limit of certain near-by tissues. It should be stated in this connection that the liability in both sexes to cancer of the gastrointestinal tract, gradually and quite uniformly diminishes from the stomach downward toward the external opening, but not including it. This fact seems to justify the thought already stated regarding the possibility of the effect of dietary traumatism on the stomach and the upper intestinal tract.

The age limit of the tissues of the stomach in health conforms to the nutritive requirements of the life to which they are all important, consequently this feature of the causation of cancer, which so freely contributes to the total of this disease in the mammary gland and the uterus, can play no part in the causation of cancer of the stomach, making it, therefore, the more apparent that alimentary traumatisms and dietary abuses are dominant influences in the causation of gastric cancer. Another fact which seems to confirm this position is that cancer in the male in the alimentary canal is quite seven times as common as in the female, notwithstanding the further fact of the general tendency of females to suffer from cancer of the alimentary canal at an earlier age than males. Surely, if cancer of the stomach were dependent in an appreciable degree on parasitic infection of alimentary substances this great difference in the relative proportions of infliction of the sexes should not exist. Finally, in males 80 per cent.[4] of all cancer affects the alimentary canal. In females 80 per cent. of all cancer affects the reproductive tract, including therewith the breast.

It seems that not a little that has been said in this relation is corroborative of the belief of those who regard cancer as a non-parasitic disease, which, in any circumstance, is not communicable.

A longer continuance in theoretical indulgence would necessarily deprive us of the opportunity of speaking in an emphatic manner, of an exceedingly important practical part in the contest against malignancy. This statement is prompted by the facts, that cancer appears to be on the increase in civilized countries, and also that the limit of effective operative therapy, the only agent of cure of general settled repute, has already quite reached the confines of highest efficiency, under the present established lines of action. It naturally occurs to thoughtful members of the profession, therefore, to enquire regarding what can be done by way of admonition and protective forethought, that will secure the holding of that already in hand, while the search for increased power in

4. Middlesex Hospital Reports, 1905.

curative therapy is advanced, let us hope, to a more successful issue.

As in any other field of human contention, so here the resources of every avenue of effort should be determined with care, and utilized with vigilance and pertinacity. The operative warriors in the conflict against malignancy, have striven faithfully and logically during the last years of the struggle, gaining advanced foothold by means of approved technic and prompt aggressiveness. By these masterly means in the cure of cancer of the breast, of the uterus and of the stomach, many, many years of comfort and happiness have been added to the lives of the afflicted and given to those who rejoice because of their preservation. These striking illustrations of cure in organs so profoundly concerned in the inception and preservation of life, are also an earnest of the outcome in other fields of operative endeavor in this respect. Unhappily, our fond anticipations of approaching relief, encouraged by this gain on malignant disease, are so often demolished by the ruinous delay of the afflicted, in utterance and action, as well nigh to arrest the increasing hope from operative measures. Too often, indeed, during the consideration of operative interference is heard the utterance of the sad truth, "too late," "too long deferred," and the like, on the part of all concerned. The remedy for this lamentation is prompter surgical action; and prompter surgical action requires a prompt acknowledgement of the presence of an unwelcome growth or manifestation on the part of the sufferer, supplanted by earnest co-operation in diagnosis and treatment.

It is surely not amiss to repeat, that the outcome of operative endeavor in malignant cases, has well nigh reached the highest possible success, unless aided by increased faith and lessened secretiveness on the part of the sufferers from a malignant infliction. Those who are afflicted with accessible growths are comparatively early aware of the presence of these unwelcome visitors. And when they shall have exercised the same degree of resentment because of physical intrusion on the part of a growth, as commonly distinguishes social or business intrusion on the part of a meddler, then, indeed, will much be gained for increased success in the struggle against malignancy. Since it now appears that cancer is located most often in the deep internal parts, beyond the safe limits of unaided sight and mere touch—(inaccessible cancer) 2½ times more frequently than is accessible cancer, regardless of age or sex, then, indeed, is the fact doubly impressed, of the necessity for prompt acknowledgment of the presence of morbid manifestations and prompt determination of their nature. The handicap imposed by inaccessible cases because of their greater distance from the surface, often enables the disease to advance undiscovered to a degree forbidding operative action when their presence is finally known. In too many instances of cancer, especially the inaccessible kind, the reasonable suspicions of its presence on the part of the patient or friends, are quieted by the soothing platitudes of medical advice, until all opportunity of relief is at an end. The physician and the surgeon should join in the observation and treatment of all such cases as these, early fostering a mutual plan of action that contemplates prompt explorative investigation in doubtful instances, and forbids delay in those of undoubted character.

It is "carrying coals to Newcastle" to state in this presence, or in that of any medical gathering of the present day, that cancer invades contiguous tissues early in the course of its development. How early no one can know. How late no one can tell. Of this, however, we are assured: Malignant activity is measured by the inherent nature of the morbid process, or by the receptive character of its host, and sometimes by both, and unfortunate indeed is the patient who is the helpless victim of both of these influences. But, on the contrary, correspondingly fortunate is one in whom each af these influences is at a minimum. A knowledge of such facts should admonish us to be charitable on the one hand, and discreetly aggressive on the other; charitable to the professional brother whose operative results may, therefore, be less fortunate than our own; discreetly aggressive so that the area of infliction may be timely removed by operative effort. Early explorative determination of the nature of disease, followed at once by operative relief in suitable cases, is today the potent measure of succor pending the advent of means of greater beneficence than those now at hand.

In emphasizing the pre-eminent importance of early measures of relief, one has only to point to the astonishing results which have attended the operative practice of many distinguished surgeons of this and foreign countries. And I believe that it will not be regarded by anyone as evidence of unwarranted pride or of bad taste, if in this connection and on this occasion, we should mention the name of our distinguished president.

If to these means of cure there be now added another for the sake of greater security, the picture in this respect will be complete—a means contemplating the education of the people on the great importance of overcoming reticence regarding such matters in their incipiency, rather than sacrificing life by senseless delay. Patients should be taught that the evidences which they may regard as important and entitled to serious thought and decided recognition, are but a step removed from the presence of hopeless despair and final destruction. They should be told that the subtle onset of malignant disease often baffles the keenest perceptions of the most experienced, requiring for arrest and for cure the best we have, and far too often, more than we can give. The exercise of vigilance in patients already operated on by those who are profoundly concerned in the cure, should be periodically and untiringly practiced, in order that the first evidence of disease may be quickly detected and remedied by renewed operation. The stake of the contest in such cases as these is a human life, and all the comfort and happiness relating thereto. Every victory is another triumph over malignant iufliction, of which there are very many in surgical experience. In the general struggle for victory against malignant disease, it should not be forgotten that all those fall who do not seek relief; and that all those who early seek relief, will surely secure added years and increased comfort, and that not a few will be finally cured. And important it is to remember that the number cured will be measured by the promptness of early diagnosis and curative action followed by untiring periodic scrutiny of the vulnerable points of return. The degree of fortitude required to sustain a patient under repeated malignant attacks, and prompt operative defense, is akin to that with which martyrs are endowed.

Finally, an emphatic warning should be given to all against the seductive influence exercised on the afflicted, by the "perversions of judgment and vain imagings" which too often allure them from the path of scientific beneficence, trodden by honest, sympathetic aid, into the wilderness of arrant quackery, infested by ghouls of heartless gain. Nor should one hasten unduly to substitute for established method in operative cases, means

which are still on trial, even though encouraged to do so by honest, yet unsettled opinion.

Rather than this one should grow in courage, stimulated by examples of successive cures from early effort, and by sentiments attuned in verse by our profession's greatest poet and our hosts' brightest ornament:

"Here stand the champions to defend
From every wound that flesh can feel;
Here science, patience, skill shall blend
To save, to calm, to help, to heal."

HOW PROGRESS COMES IN MEDICINE.

ORATION ON MEDICINE AT THE FIFTY-SEVENTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION AT BOSTON, JUNE 5-8, 1906.

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During the past year there has been no very conspicuous advance in medicine. Advance there has been, of course, but it has been all along the line rather than any one direction. I propose, therefore, to-night to attempt roughly to sketch, as far as the limitations of time and my knowledge permit, some features of the progress of medicine in the past, its irregularity, apparent lack of logical sequence, dependence on the progress of science (knowledge) as a whole, the way in which advance along a very narrow line may lead to advance along the whole front.

We may for a moment compare the whole body of scientific workers to an army determined to enter into and possesss the empire of ignorance, a country of vast extent and presenting every conceivable physical difficulty to advance and occupation. This is one obstacle. Another lies in the fact that the army has not—nor can it have—an organization comparable to that of the ordinary army with its commander-in-chief, chief of staff, corps and division and brigade commanders, although it has the corps and divisions. Each has its leaders, who owe their position solely to merit. Influence, dynastic, political, family, does not count. Promotion is from the ranks. The rise to high position may be very rapid; deposition is occasionally correspondingly so. Far more than in even Napoleon's army *la carriere est ouverte aux talents.* The freest criticism is permitted, nay encouraged; government is largely by discussion based on observation and experiment. There are many scouts and skirmishers who are necessary to any advance, even of a division. There are also, alas! camp followers. As organized to-day we may distinguish six army corps—anatomy, physiology, chemistry, physics, pathology, clinical history.

Permit me now, dropping analogy, to call your attention to some of the lines of march which have been traversed, some of the territory won, some of the means by which it has been gained.

Gross anatomy was about as well, though, of course, not so widely known three hundred years ago as it is to-day. Medicine had got about as far as it could until the knowledge of a heart, of blood, bright and dark, of blood vessels, was vivified by Harvey, who, without instruments of precision, by experiments on living animals, by clear sight and straight thought, solved the mystery of the circulation of the blood. This step in physiology, in knowledge of function, threw a flood of light backward on structure and was indispensable to further progress. Harvey, a practicing physician, paved the way for Malpighi, anatomist, father of histology, who saw what Harvey had no means of seeing—the capillary circulation. He was contemporary with Leeuwenhoek, the lens-maker, improver of the microscope, and then the microscopist making important contributions to the structure and function of the living organism. Here we see one of the first contributions of physics to medicine. It is remarkable that Leeuwenhoek could do what he did with the simple microscope. He had been in his grave more than a century before any essential advance was made in the compound microscope, gradually leading up to the instrument which has played such a vital part in the progress of modern medicine, and to which I shall again have occasion to allude.

Bichat, indeed, performed his great work and founded the anatomy of the tissues without the aid of the microscope, so imperfect in his day that he thought it more likely to promote error than to discover truth. The ultimate anatomic component of the tissues and organs alike, the cell, though seen and described by Robert Hooke long before, was first seen in its developmental relations in plants by the botanist, Schleiden. Schwann extended this knowledge into animal life. Thus was founded the physiology of the cell. Fresh impetus was given to embryology, so deeply indebted to Caspar Friedereich Wolff of the previous century, and the way was smoothed for Virchow and the pathology of the cell.

In the past hundred years the anatomy of the central nervous system has not been illuminated by anatomists. The microscope showed that the grey matter is composed mainly of cells, the white of fibers. No mere anatomic study could possibly have differentiated the function of grey and white matter, the anterior and posterior nerve-roots, the motor and sensory nerves running in a common cable. Charles Bell, the surgeon, by vivisection, made a great step in physiology and thus advanced anatomy. Marshall Hall, the physician, and Johannes Mueller, the physiologist, again made a further advance in explaining reflex action and its mechanism. Waller, the physiologist, teaches us the lesson of the degeneration of nerve fibers separated from their centers. Anatomy never could have taught us the great lesson of cerebral localization, nor could animal experimentation or physiology alone. The starting point came from the clinician who, through careful comparison of the experiments of disease on the human being during life and after death, pointed out the way for physiologic experiment to follow. Critical clinical study first, pathologic anatomy second, physiology third, anatomy fourth; structure and function, function and structure; indissolubly bound together; advance in one must lead to advance in the other.

Time does not permit me to take up chemistry by itself. In other connections I shall allude to the help it has given to medicine and its progress. Chemistry looms large in the future, and we must look to the biologic chemist to solve, or aid in the solution of, some of the biggest problems which confront us to-day.

Morgagni may be regarded as the founder of pathologic anatomy, John Hunter of its greater outgrowth—pathology. Pathologic anatomy, however, remains sterile until wedded to clinical observation. Laennec is the high priest who officiated at this alliance. Borrowing percussion from Corvisart, who resurrected it from the grave of Auenbrugger, and, with the aid of physics, developing mediate auscultation, he compared the signs of thoracic disease in life in the ward with the changes wrought by it after death, and in ten years performed one of the most stupendous feats in medicine, putting

the recognition of cardiac and pulmonary disease in the living at a level from which it had advanced little for sixty odd years, when the physicist with his *x*-rays made a new advance. Not only so, but Laennec's conception of tuberculosis in the lungs was far more true than that to which a too exclusively anatomic point of view led Virchow, whose great authority again led astray Buhl, Niemeyer and a host of pathologists and clinicians. How Laennec's view of the unity of tuberculosis was confirmed and extended I shall touch on later. Louis follows close on Laennec and enforces the lesson of the value of method and accuracy in the study of disease. It is he who inspires his young American pupils to separate typhus and typhoid fever. Neither pathologic anatomy nor clinical study alone sufficed; in conjunction they succeeded. The power to distinguish between the two diseases clinically has done much to bring about the practical extinction of the contagious typhus. In very recent times the clinical resemblance of typhoid fever, the estivo-autumnal form of malaria and of trichiniasis was in some cases so close as to render timely diagnosis difficult, to say the least. Laveran's discovery of the plasmodium, Widal's of the reaction bearing his name, and Brown's of eosinophilia in trichiniasis go far to insure diagnosis, to aid treatment, to promote preventive medicine. Laveran directly aided diagnosis, but he also paved the way for Theobald Smith's brilliant demonstration of the cause of Texas cattle fever, of the rôle played by insects in the transmission of certain infections to man and animals. Thus the accusation of Manson of mosquitoes in general has ended in the conviction of some species as necessary links in the development, first, of malaria, next of yellow fever. The mysterious sleeping sickness of man and the tsetse fly disease of horses in Africa are found to rest on a similar pathology. The alarming spread of the sleeping sickness coincident with opening up the country and increased travel is noteworthy. In 1873 Obermeier discovered the spirillum of relapsing fever. In the African form of the disease at least it seems to have been recently conclusively proved that a tick plays the part of intermediate host. The life history of the teniæ was worked out by close observation and experiment without much aid from the microscope, such is their size; but the analogous life history of these minute forms of life and their relation to disease must, per force, await the modern microscope. These are some of the latest triumphs in the application of bacteriology to medicine.

Bacteriology was brought into being by the conjunction of the perfected microscope; the chemist Pasteur, who gave the death-blow to the doctrine of spontaneous generation; another chemist, Hoffman, who made his own fortune and then promoted the welfare of humanity by his discovery of the anilin dyes which enable us to see and distinguish organisms many of which are otherwise invisible or unrecognizable; and the physician, Koch, whose solid media on plates so greatly facilitated the isolation and perpetuation of pure cultures of this and that organism. Cut out any one of these four links and we should not be where we are. Laennec's conception of the unity of tuberculosis of the lungs is confirmed, and it is proved that lupus and scrofula, which I have heard the great Hebra suggest to be manifestations of syphilis in the second or third generation, are tubercular in nature.

More than a century has elapsed since Edward Jenner, the provincial practitioner, conferred one of the greatest boons humanity has ever received by rendering it possible to practically annihilate the loathsome and deadly smallpox. The great pox remains a mystery—*pace* the *Spirochæta pallida*. We anxiously await some discovery which will do for scarlet fever and measles what Jenner's discovery did for variola, what antitoxin has done for diphtheria. We are still in outer darkness as to the pathology of these eruptive infections, though the studies of Councilman and his pupils fill us with hope.

The demonstration by Fitz of the relation of the appendix to peritonitis and his work on the pancreas involve another combination of accurate pathologic knowledge, clinical observation, unusual critical acumen, and the experience of the past as collected and recorded in the library, a factor in the progress of medicine the importance of which is daily winning recognition. Would that we had with us to-day in the flesh James R. Chadwick, to whose enthusiasm, energy and devotion in building up the Boston Medical Library not this community alone, but the country at large is deeply indebted. His interest, counsel and duplicates were always at the service of infant medical libraries, to many of which he was wet nurse.

Between Sir Humphrey Davy, chemist, and Morton, dentist, the possibility of surgical anesthesia lay in an almost dreamless sleep for half a century. How sudden the awakening, how momentous its effects! Surgery ceases to be a last resort. Half its terrors are shorn away. Bacteriology shears away the other half, and to-day scarce an organ, cavity or part remains a sanctuary of disease. Anatomy, physiology, pathology are all enriched by the surgeon's knife used for beneficent purposes on the living man—literally vivisection. I specify alone tubercular peritonitis, supposed to be necessarily fatal until the surgeon, operating under the false diagnosis of ovarian cyst, proved that it may be recovered from. Some cases of tubercular peritonitis need the knife; but many cases get well without any sort of operative intervention. For this advance, I repeat, we have to thank the surgical clinician.

The story of myxedema seems to be one of the most thrilling in medicine, and serves my present purpose in that it shows how the searchlight of clinical observation may illuminate dark places in physiology and pathology. The anatomist finds and describes the ductless glands. The physiologist is at a loss to explain their function. The thyroid is a riddle. Its endemic enlargement, often associated with faulty development alike bodily and mental, is noted, excites interest and speculation, but is another riddle. The great clinician, Gull, describes "A Peculiar Cretinoid State Supervening in Women in Adult Life." He puts forward no theory, but describes merely what he sees, a change coming over previously healthy grown women, producing a state similar to that of the cretin, and quite apart from endemic influence. He opens eyes which so easily overlook what is directly under them. Ord makes the first autopsy, and from the mucin reaction in the swollen tissues cuts the name down to one word, myxedema, still mainly descriptive. So also is Charcot's name—cachexie pachydermique. Clinical surgery now steps on the scene, and we see that the result of the extirpation of the thyroid for goiter, as reported by Kocher and Reverdin, is identical with myxedema. Thus the pathology of the condition is rendered clear, and for the first time we get a definite idea as to the function of the thyroid. The riddle is largely solved. Very soon myxedema becomes one of the most gratifying diseases to treat, and the remarkable fact appears that neither cooking nor gastric digestion notably impair the efficacy of the gland. It is note-

worthy that this great advance comes purely from clinicians, medical and surgical. The experiments of Schiff and Horsley on monkeys, although interesting and confirmatory, are not essential stones in the structure. The evidence is sufficiently complete without the aid of what is ordinarily termed the laboratory; and here it may be remarked that the tendency of the present day is too much toward the limitation of the term scientific medicine to that part of investigation carried on either apart from hospitals or by men not directly dealing with the sick. The work of the clinician may be every whit as scientific as that of his laboratory brother. The purely laboratory man has the advantage that he can inaugurate, systematize and govern his experiments, most of which must be on animals. The clinician has the advantage that the experiments performed for him by disease are on human beings and are oftentimes of such a nature as can not possibly be made artificially. On the other hand, the clinician is apt to find his time and strength so drawn on by individuals clamorous for relief that his highest work suffers. Does medicine afford a better illustration of the interdependence of workers in different fields than lies in the story of myxedema? Great as was the specific discovery of the function of the thyroid, still greater was its direct outgrowth, the broad fact of internal secretion, the sole function of the ductless glands, perhaps also an important function of glandular structures pouring out a secretion through a constant and definite channel.

Before turning aside from the work of the clinician I should like to mention one other advance which has been made and several riddles which still confront us. In the index of Watson's Practice, a book not read to-day as much as it should be, American edition of 1872, neuritis is found only as optic neuritis. James Jackson had recognized paralysis due to alcohol. Buzzard popularizes the knowledge that the trouble is seated in the peripheral nerves in these cases, and that alcohol is only one of many toxic agents liable to cause this result. How easy it is to-day to recognize multiple neuritis, usually to determine its cause in any given case; but there were just as many cases of it fifty years ago as there are to-day. Jaundice was formerly a disease. It is now a symptom only. Rheumatism we now recognize as a tangled skein, the threads of which we are just beginning to unravel. We are dissatisfied with diabetes as a final diagnosis, and are groping for light which may enable us to differentiate the causes of sugar as we have those of bile in the blood and the tissues. We suspect an infection behind purpura. We speak of purpura simplex and purpura hemorrhagica. We know that there are many infections which, when intense, are liable to cause hemorrhage. Our ignorance is dense as to the part played in any case by individual peculiarity as well as to other features of many cases of purpura.

From the side of physics has come one of the most notable of recent advances. Roentgen rays are doing much for the clinician, medical as well as surgical. Are there *y*- and *z*-rays? How long must we wait for their discovery? What will be their practical application? Physics, again, has given us the ophthalmoscope and exposed a prolongation of the brain to direct vision. The aurist owes it much. It enables us to illuminate the interior of the bladder, larynx and trachea, and other cavities; to localize pathologic processes, to watch their progress in the living body, intelligently to relieve and cure conditions which otherwise and formerly were necessarily left to that *vis naturæ* which may be *medicatrix*, but is too often *lethalis*.

The debt of medicine to all those half-truths which are too indiscriminately classed under the terms quackery or charlatanism is real and should be recognized. We believe homeopathy to rest on assumptions unfounded in fact, untenable to-day. The most bigoted of us, however—for there is a bigotry of science as well as of religion—can not deny that homeopathy has advanced medicine, leading to a clearer knowledge of the limitation of the therapeutic action of drugs, of their uses and abuses.

The power of suggestion, the influence of mind over body, whether exercised through hypnotism, mind cure, faith cure, Christian science, what you will, throws a flood of light on physiology and pathology, stimulates the study of experimental psychology, illuminates the influence of the nervous system on the circulation and thus on nutrition. An eminent orthopedist recently classed the natural bone setters, so-called, as forerunners of science, at a time when ignorance as to the action of trauma and disease on joints was profound. They, relying on common sense and observation alone, achieved results which science, timid from knowledge of its ignorance, failed to achieve. There is always a germ of truth in every form of irregular (unscientific) healing—a fact which it behooves us to recognize and be ready to apply.

The services of a laywoman, Lady Mary Wortley Montague, in the introduction of inoculation for smallpox, bitterly fought by our profession of the time, should not be passed without recognition.

All the sayings of a wise man are not necessarily wise, and Solomon, probably when tired or dyspeptic or worried with some family strife, said that there is nothing new under the sun. New things, certainly new in their relation to us, are coming forward every day. Not only so, but the new things spread abroad with wonderful rapidity in these telephonic days, becoming common property.

I have brought you nothing new to-night. I have simply tried to illustrate from the history of the past, how imperfectly I only too well realize, the apparently inconsequent advance of knowledge, the correlation of the sciences, the way in which a fact seemingly perhaps unimportant is always potentially fruitful, often bearing fruit of a totally unexpected kind, it may be after many days. In a positive sense we know more than our predecessors; in a relative sense we may be said to know less. The farther we advance into the empire of ignorance the larger we find it to be, each mountain peak showing higher peaks in the distance.

Life consists in the exercise of our faculties, happiness in the performance of duty and in achievement. We have an abiding faith that "all things work together for good."

Paratuberculosis.—A. Ferranini (*Arch. Gén. de Méd.*), suggests that what is commonly called hereditary predisposition to tuberculosis may be really only the manifestation of an infection by the tubercle toxin transmitted from tuberculous parents in an extremely attenuated form—a paratuberculosis. All the symptoms of the so-called predisposition, he thinks, are those that might easily be due to a very attenuated tuberculous infection, and this view is supported by the clinical and experimental observations of later immunity to the graver forms of the disease. For further testing the question he suggests the use of the serum reaction of Arloing and Courmont, which is positive with negative tuberculin test, would indicate paratuberculosis, and also the urinary test of Mariani and others for the presence of latent or attenuated tuberculosis.

Original Articles

THE CAUSE OF THE HEART BEAT.

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BALTIMORE.

(*Concluded from page 1670.*)

The Auriculoventricular Bundle.—It was formerly held that the myogenic theory is inapplicable to the mammalian heart because no muscular connection exists between auricles and ventricles. This objection has been completely removed in recent years.

On the anatomical side the work of Kent, W. His, Jr., Retzer, Braeunig, Humblet and Tawara has shown beyond doubt that a small muscular slip passes from the auricle into the ventricular septum. In man, according to Retzer, this bridge is about 1.5 mm. in thickness, 2.5 mm. in width and 18 mm. long.

On the physiologic side the experiments of His, Hering, Humblet, Fredericq and especially of Erlanger, have proved with equal certainty that it is along this narrow bundle that the wave of excitation is conveyed from auricle to ventricle. The last named observer has shown in a series of brilliant experiments that if this bridge be compressed by a specially devised clamp, the sequence of the ventricular on the auricular contractions may be removed either completely or partially. In the former case there is complete heart block, and the ventricle, after a preliminary pause, beats with a slow rhythm entirely independent of that of the auricle. In the latter case the block is partial, and the ventricular beats exhibit a 1 to 2 or 1 to 3 rhythm, as compared with those of the auricle.

Erlanger has succeeded in showing that in man under certain pathologic conditions an exactly similar condition prevails, forming the important feature of the Stokes-Adams syndrome.[26]

Autopsies, indeed, have shown that in some of these cases a demonstrable lesion exists in the region of the bundle. No one can deny the importance of this bundle as the physiologic link connecting auricles and ventricles. If it so happened that the tissue composing it was entirely devoid of nerve fibers the myogenic hypothesis would be practically demonstrated. According to Tawara, however, the bundle is provided with a nerve network similar to that found enveloping the muscular tissue of the rest of the heart, and naturally the neurogenists attribute to this network the functions that the myogenists would assign to the muscular bundle itself.

A definitive answer to our problem is, therefore, again postponed. The myogenists may, however, urge with justice that the probabilities here are once more in favor of his view. This bundle constitutes the only known muscular connection between auricles and ventricles, while nerve connections between the two chambers exist freely in other parts of the auriculoventricular ring;[27] yet severance of this small muscular bridge is all that is necessary in order to interrupt completely the physiologic connection between auricle and ventricle. Investigation of this interesting structure has but just begun. We may hope that future work will develop facts of fundamental significance for the physiology and pathology of the heart. Already one suggestion has arisen out of the work, which indicates the possibility of a new point of view regarding the cause and sequence of the heart beat. Tawara maintains that the cells composing the bundle are not ordinary heart muscle, but that variety of cardiac muscle which has been designated as Purkinje fibers or cells. He believes that the bundle after entering the ventricle spreads out to constitute the Purkinje cells that are known to form a layer beneath the endocardium, and one may conceive that this layer has a still further distribution within the mass of the heart musculature. There is thus presented the possibility of a widespread occurrence of a specially modified type of contractile tissue which may be intimately connected with the phenomenon of automatic rhythmicity as well as of conduction. We must, however, await further investigation before attempting to speculate on this modification of the myogenic theory.

The Action of the Accelerator Nerves.—It has been known that the hearts of both warm-blooded and cold-blooded animals may be kept alive for hours after excision from the body, provided they are supplied with an artificial circulation.

Recently the possibilities of thus maintaining an isolated heart, or of reviving its activity after death, have been developed in a remarkable way. Kuliabko was able to restore the beat of the heart in animals that had been dead three or four days, by the simple process of supplying the coronary vessels with a Ringer's solution. He obtained also similar successful results on human hearts as late as twenty hours after death. In an experiment made on the heart of a man who had been dead eleven hours, Hering was able to restore its beat for a period of several hours. Hering has made use of this possibility to study the source of the heart's automatic rhythm.[28] He found in the course of experiments on the isolated mammalian heart that the inhibitory and accelerator nerves continued to give their respective effects for a long period of time. In one case in a monkey the vagus retained its inhibitory action for six hours after death, and the accelerator for more than fifty-three hours. On the other hand comparative experiments made on rabbits and dogs showed that sympathetic nerve ganglia, such as the superior cervical or the ciliary, lose their irritability very quickly after death, even when supplied with an artificial circulation of Ringer's solution. It seems probable from these experiments that the maintenance of an automatic rhythm in the heart so long after excision or after somatic death can not be due to the activity of intrinsic ganglion cells. Since, moreover, the accelerator fibers retained their irritability in these experiments for very long periods after death it would seem probable that they do not end in the ganglia of the heart but are distributed rather directly to the heart muscles. Such a conclusion implies that the rhythm of the heart beat originates in automatic processes within the muscular tissue itself.

THE MYOGENIC THEORY OR THE NEUROGENIC THEORY?

From consideration of the brief review of the current literature and discussions on this subject it appears to me that every impartial observer will be forced to come to the same conclusion as that reached by Hofmann in his excellent critical paper published in 1898, namely, that the myogenic theory is the most probable of any that have been proposed so far. The theory in its most general form assumes that contraction waves or excitation waves arise in the sinus region and are conducted by the muscular tissue over the whole heart, the visible

26. Erlanger: The Jour. of Exper. Medicine, 1905, vol. vii, No. 6; ibid., 1906, vol. viii, No. 1.

27. See Lomakina: Zeits. f. Biol., 1900, vol. xxxix, p. 377.

28. Hering: Pflüger's Archiv., 1903, vol. xcix, p. 253.

effect at each point being dependent on the condition of the musculature at that moment. At the passage from auricle to ventricle there is a slowing of the conduction due to the small size and special properties of the narrow bundle connecting the two chambers. Moreover the condition of the musculature at any point may be influenced in opposite directions by nervous influences, inhibitory and accelerator, which, however, have nothing to do directly with the origination or conduction of the initial motor impulse.

This theory gives in general an adequate explanation of the phenomena of the normal heart beat, and of those variations that occur under pathologic and experimental conditions, but in order to apply it in detail we need to know more of the processes that lead to contraction and relaxation. In fact, the phenomenon of the co-ordination of the beat is not sufficiently accounted for, whether we adopt the myogenic or the neurogenic theory. The difficulty is apparent if we stop to consider those conditions which lead to inco-ordinated contractions, such as are exhibited in the peculiar fibrillated movements of auricle or ventricle. In this condition the mass of the musculature of the ventricle, instead of contracting simultaneously or in a rapid wave running from one end to the other, exhibits feeble local contractions and dilatations which involve only small areas, and give the entire ventricle the appearance of a fluttering, trembling mass.

One of the most remarkable means of thus throwing the co-ordinated contraction of the ventricles into inco-ordinated fibrillary movements is the heart puncture as described by Kronecker and Schmey.[29] A needle thrust into the heart at the lower border of the upper third of the septum may produce the transformation almost instantaneously. In my experience the phenomenon is somewhat difficult to obtain. In many cases the heart may be punctured a number of times in the region indicated with no other result than a temporary acceleration of the beat. At other times, however, the first thrust of the needle is followed by the development of fibrillary contractions. Kronecker's first explanation that the needle penetrates a co-ordinating nerve center situated in this part is, as we have seen, not supported by other facts; and his second suggestion that the phenomenon is due to excitation of a vasomotor center which causes an ischemic condition of the ventricle is likewise difficult to accept, in view of the small evidence that we possess of the existence of vasomotor nerves to the cardiac vessels.

It is, I believe, equally impossible to furnish an entirely adequate explanation of the phenomenon on the myogenic theory, although possibly, a fuller understanding of the properties of the tissue composing the auriculoventricular bundle may throw some light on it. In the terrapin I have seen a similar phenomenon occur in the auricles as a result of stimulation of the vago-sympathetic nerve, when the heart was being irrigated with a solution containing an excess of calcium chlorid (0.138 per cent.) or a solution which was lacking in potassium salts. The fibrillation in the former case took place at the end of the stimulation, that is, after the inhibition had passed off.[30] It may be, therefore, that the fibrillary contractions are the result of those influences which lead to the development of an augmented rhythmicity throughout the muscular tissue. In our present condition of knowledge, however, it is perhaps wiser not to speculate on the cause of this singular phenomenon.

THE FUNDAMENTAL QUESTION.

Whichever of the two opposing theories we may adopt there remains for discussion the further deeper question of the initial cause of the heart beat. Under normal conditions it will be remembered that the beat arises spontaneously in the sinus region, the rest of the heart contracting in turn only as a result of the stimulus received from the venous end.

The Automaticity of the Heart Beat and the So-called Inner Stimulus.—It has been customary to refer the cause of the spontaneous beat to the production of an inner stimulus, and we have to consider what suggestions have been offered as to its nature and origin. Haller assumed that the venous blood excites the heart, acting presumably as a chemical stimulus. This conclusion seems to have rested mainly on the observation that the heart ceases to beat when deprived of blood. Those who advocated this view made no hypothesis as to the special constituents of the blood which are charged with this important function. Later some of the older observers suggested that the blood acts simply as a mechanical stimulus to the heart, its pressure on the heart walls being the initial cause of the beat.

The experimenters of the early part of the nineteenth century had abundant opportunities to observe that in the cold-blooded animals the heart continues to beat for a long time after removal from the body and even when its cavities are widely opened by incisions. This fact influenced most of the physiologists throughout the nineteenth century to take the stand that the blood has no direct influence on the production of the heart beat. While it furnishes nutriment to the heart as to the other tissues, it is not immediately concerned in the causation of the beat. On the contrary it was assumed that the inner stimulus is autocthonous, that is, arises within the heart itself as a result of its own metabolism. The most concrete statement of this point of view is found in the aphorism used by Langendorff, "*Das Lebensprodukt der Zelle ist ihr Erreger.*"[31] That is to say the normal catabolism within the heart muscle or its intrinsic nerve cells gives rise to some substance which acts as a stimulus. There is no evidence, however, other than the automaticity itself, that such a stimulating substance is produced and no suggestion is made as to its nature. That a substance of this sort is not produced during the specific catabolism leading to the contraction is indicated by the fact that in a heart brought to rest by the inhibitory nerve the inner stimulus continues to increase during the period of quiescence, until at last it breaks through the inhibitory control and the heart again beats.

Those who hold to this view, therefore, must assume that this unknown stimulating substance is a product

29. Kronecker: Zeits. f. Biol. (jubilee volume), 1896, p. 529.

30. Dr. Erlanger tells me that in several cases he has observed that stimulation of the vagus nerve in the dog, during experiments in which the chest was widely opened and the pericardium was dissected off, was followed after interruption of the stimulation by a period of inco-ordinated contractions. McWilliam (Jour. of Physiol., 1888, vol. ix, p. 392) records that in the isolated heart of a cat stimulation of the vagus caused rapid fluttering movements of the auricles instead of the usual inhibition. Knoll (Pflüger's Archiv., 1897, vol. lxvii, p. 591) refers also to the fact that in the mammalian heart stimulation of the vagus may call forth fibrillary movements in the auricles. Direct stimulation of the heart with induction shocks, if strong enough, will throw the heart into fibrillary movements and a similar result follows or may follow conditions of marked anemia. In strips of the ventricle from the terrapin's heart it is sometimes observed that excessive doses of calcium salts in the bathing liquid may so change the irritability of the muscle that a simple induction shock calls forth fibrillary movements instead of the usual contraction (Schultz).

31. Langendorff: Archiv. f. Anat., u. Physiol. (physiology division), 1884, supplementary volume, p. 1.

of the resting metabolism of the heart. This, in fact, is the view advocated by Engelmann.[32] He holds that there is a continual production of stimulating substance at the sinus end of the heart, which as soon as it reaches a certain quantity excites the muscle and starts a wave of contraction. Since, moreover, each systole is followed by a period of inexcitability which constitutes the diastolic or resting phase, it is a necessary part of this theory to assume that the process of contraction in some way arrests the production of stimulating substance and indeed destroys or antagonizes that already formed. Hering[33] seems to adopt a similar point of view. Without venturing on any speculations regarding the nature of this stimulating substance or the processes leading to its production, he develops the idea that a similar process may occur in the atrioventricular region or in the ventricle itself, the effective stimulus produced in these latter locations being designated as heterotropic in contrast with the normal stimulus which arises at the venous end. In other words he adopts the view that parts of the heart other than the sinus region may develop automaticity under certain conditions.

Many investigators have been unwilling to remain content with such general explanations and have sought, therefore, to ascertain what substance or substances constitute the actual stimulus for the heart's contractions, or bear such a close relation to this phenomenon as to form a necessary step in its development. Most of the investigators in question have directed their attention to a careful examination of the specific influence of the individual constituents of the blood. They have followed the general line laid down by Haller in seeking the immediate cause of the heart's activity in the action of the blood itself. The fact that an apparently bloodless heart continues to beat is no argument against such a view, for it is obvious that a heart whose cavities have been depleted of blood by washing is still saturated throughout its substance with tissue lymph, which must be considered in this connection as an actual part of the blood.

One somewhat peculiar view of the relations of the blood to the heart beat has been proposed by Kronecker. As far back as 1874[34] this author expressed the opinion that the heart muscle can continue to contract only when it receives a constant supply of fresh food material. Subsequently in a series of papers published by himself and his pupils[35] he attempted to show that the serum albumin contained in the blood (and lymph) forms the immediate source of the energy of the heart's contractions, and that these contractions can continue only as long as a supply of this material is present in the liquid bathing the tissue. The insufficiency of the experimental data on which this hypothesis was based has been demonstrated by others[36] and the progress of investigation in recent years has been such as practically to remove it from the field of discussion. At the time that Kronecker's chief investigations were made the importance of the effect of the inorganic constituents of the blood was not adequately understood.

Recent Investigations.—The most modern and seemingly the most hopeful line of investigation on the cause of the heart beat was started by Ludwig in 1875. Under his guidance Merunowicz began the study of the relations of the inorganic constituents of the blood to the heart beat. Before that time and for many years subsequently, perhaps even at the present day, physiologists were accustomed to consider only or mainly the organic constituents of the heart or of the blood in discussing the cause and conditions of the rhythmic beat. In the theories of Langendorff and of Engelmann referred to above it is implied, although not specifically stated, that the unknown substance constituting the "inner stimulus" is organic in nature. Merunowicz was able to show that aqueous solutions of the ash of blood, free from all organic matter, have a remarkable efficacy in causing and maintaining the contractions of the frog's heart.[37] He attempted to analyze the specific influence of the several constituents of the blood ash, but in this effort he and the workers in the same laboratory who continued his investigations, were unfortunate in overlooking the importance of the minute amounts of calcium salts present.[38] Nevertheless it was made clear by their work, particularly by that of Merunowicz, that the inorganic constituents of the blood have an important relationship to the development of the heart beat.

In 1883, Ringer, by a fortunate accident, was led to study the effect of calcium salts on the heart's contractions,[39] and on the basis of his experimental results he devised an artificial serum, known now as Ringer's solution, which is capable of maintaining the beat of the heart in a wonderful way. This solution contains certain amounts of sodium, potassium and calcium salts, and for some hearts also a trace of alkali in the form of sodium carbonate. Its extraordinary efficiency in developing and maintaining the beat of the isolated heart both in the cold-blooded and the warm-blooded animals is known to all physiologists. The heart of the dog, rabbit, cat and of man himself has been kept beating on this inorganic diet for many hours, or even for days. Locke has succeeded recently by making use of a modified Ringer's solution, containing dextrose, in keeping a rabbit's heart beating for four days after removal from the body. The action of this artificial serum and the specific effects of its different constituents have since been the object of a large number of investigations by Ringer himself and by many other workers in various parts of the world.[40] It is entirely evident that a simple aqueous solution containing only sodium, calcium and potassium salts, together with oxygen, cannot furnish nutriment to the heart in the sense of supplying it with a source of energy for its contractions. The rôle of these salts must be found in their relations to the origination of the heart beat, that is to say, their connections with the chemical changes in the organic constituents which give rise to the energy of the contraction.

Experiments on the hearts of the cold-blooded animals indicate that so far as the circulating liquid is concerned the potassium salts do not form an absolutely necessary constituent. The heart as a whole, or different parts of it, may continue to give rhythmic beats when immersed in or supplied with a solution containing only sodium and calcium salts. There is no doubt, however, that for the heart as a whole, and, therefore, especially for the venous end of the heart, the presence of potassium salts makes a better balanced mixture, and one which maintains a normal beat for a longer period

32. Engelmann: Archiv. f. d. ges. Physiol., 1897, vol. lxv, p. 109.
33. Hering: Centbl. f. Phys., 1905, vol. xix, p. 129.
34. Ludwig's Festgabe, 1874.
35. Kronecker and McGuire: Archiv. f. Anat. u. Physiol. (physiology division), 1878, p. 321; also von Ott: *Ibid.*, 1883, p. 1; Kronecker and Popoff: *Ibid.*, 1887, p. 345; Brinck and Kronecker: *Ibid.*, 1887, p. 347; White: Jour. of Physiol., 1896, vol. xix, p. 344.
36. See Howell: Amer. Jour. of Physiol., 1898, vol. ii, p. 47; also Greene: *Ibid.*, p. 82.
37. Arbeiten aus d. phys. Anstalt in Leipzig, 1875, p. 132.
38. Gaule: Archiv. f. Anat. u. Physiol. (physiology division), 1878, p. 291; also Stiénon: *Ibid.*, 1878, p. 263.
39. Ringer: Jour. of Physiol., 1883, vol. iv, p. 29 and p. 370.
40. Locke: Centbl. f. Physiol., 1905, vol. xix, p. 737.

of time. We must bear in mind that the heart muscle contains a considerable store of potassium, and the fact that it continues to contract rhythmically when supplied with a mixture containing only sodium and calcium salts, is no proof that the potassium does not continue to play its important and necessary rôle, whatever that may be. All the evidence from experimental work indicates that the potassium salts are concerned chiefly with the production of the condition of relaxation, the phenomena of diastole and inhibition.[41] In the matter of the contraction of the heart, therefore the rôle assumed by the sodium and the calcium respectively, has excited the chief interest. One set of observers (Loeb, Lingle[42]) have believed that the sodium salts (or rather sodium ions) stand in the most immediate relation to the process originating the contractions. "Among the ions found in blood, those of sodium are the producers of rhythmic activity. They constitute the primary stimulus." While others (Ringer, Howell, Langendorff, *et al*) believe that it is the calcium salts which are most directly concerned in the actual contraction, although the manner and extent of their action are differently interpreted by the several authors. A large literature has sprung up in recent years on the specific effects of these salts under different conditions.

The time at my disposal does not permit me to enter into the details of the discussion, and, indeed, the facts at present are not so numerous nor so definite that one is able to draw any very satisfactory conclusions in regard to their real manner of action. Instead of attempting to present or discuss these details permit me to call your attention to certain general conclusions that may be derived from the accepted fact that these inorganic elements play an essential part of some sort in the processes underlying the heart beat.

GENERAL CONCLUSIONS.

In the first place what is or may be their relations to the so-called inner stimulus? Langendorff[43] and others while admitting the necessity of these substances, characterize them simply as conditions which must be supplied in order that the inner stimulus may act; conditions of the same general character, for example, as a suitable temperature or the presence of oxygen. From this standpoint, therefore, the inorganic salts have nothing to do directly with the initiation of the beat, although this phenomenon can not take place in their absence. On the other hand Lingle has stated that the sodium ions form the direct stimulus to the heart's activity, while I have been quoted by several authors as advocating the view that the calcium ions constitute the inner stimulus. I must object to this interpretation of my views on the action of the calcium salts. In my last paper on the subject I have stated simply "that the energy of the heart beat is derived from material stored in its own substance. For the utilization of this supply of energy, however, certain conditions are necessary, and the principal one of these conditions seems to be the presence in the liquids of the heart of a supply of calcium in some form." And again, "Under normal conditions the stimulus that leads to a heart contraction is dependent on the presence of calcium compounds in the liquids of the heart."

These views do not differ materially from those finally accepted by Langendorff, except in the fact that he supposes the creation in the heart of some as yet unknown substance which acts as the "inner stimulus." We have no proof that any such substance is formed and, indeed, to my mind there is no necessity for assuming the existence of a specific inner stimulus. In discussing such a point one must define first of all what is meant by a stimulus. Ordinarily by this term we mean some form of energy which, acting on the irritable living substance, causes it to exhibit its specific form of activity. If the chemical reaction underlying functional activity is directly induced by a special compound or even by a specific ferment, I presume that we should be justified in characterizing this compound or this enzyme as a stimulus. But if, as may well be the case, the living substance is of sufficient instability to break down spontaneously, under the conditions prevailing in the tissue, then the chain of events leading to the display of functional activity may be inaugurated without the activity of a specific inner stimulus. It is in this manner that, I conceive that the spontaneous beat of the heart arises.

The immediate cause of the contraction is a chemical reaction or a series of such reactions. In accordance with the knowledge of our day we may assume that the first step in this series consists in the dissociation, the falling into pieces of a complex, unstable molecule, and that this dissociation is followed by an oxidation of the split products. The undoubted necessity of the oxygen for the normal production of a heart contraction may be referred, therefore, to the part that it plays in the second stage of the process, and not to its action as a primary or initial stimulus. The "inner stimulus," if such a thing exists, must be concerned in the production of the initial step of dissociation. We may inaugurate this first step, as is well known, by the application of some external form of energy, such as a mechanical impulse, an electrical current, a nerve impulse, etc., and it is conceivable, of course, that it may be started, as Langendorff and Engelmann have supposed, by some specific substance formed in the metabolism.

It seems to me, however, equally as probable or more probable that this initial step takes place really automatically or spontaneously, in consequence of the instability of the substance in question. My own work has convinced me that the calcium salts are in some way of prime importance in this matter of the initial dissociation of the energy-yielding substance, but I do not believe that they act as a direct chemical stimulus. Speculations on this subject must at present go beyond the limits of our real knowledge and are, therefore, liable to be partly or completely erroneous.

The following facts must be taken into account by any hypothesis which attempts to picture the processes causing the rhythmic contraction and dilatation of the heart muscle:

1. The heart possesses within itself a store of energy-yielding material, such that it may continue to give many hundreds or thousands of contractions after its supply of nutriment has been cut off.

2. Each contraction, whether caused normally or by an artificial stimulus is maximal, and, therefore, probably uses up all of the energy-yielding material which is at that moment in an irritable condition, that is to say, in such a condition that it may be acted on by a stimulus.

3. The amount of this material in irritable form is nil during the phase of systole, but increases in amount throughout the period of diastole. We know, for

41. See Howell: Amer. Jour. of Physiol., 1906, vol. xv, p. 280.
42. See Lingle: Amer. Jour. of Physiol., 1900, vol. iv, p. 265.
43. See Ergebnisse d. Physiol., vol. i, part ii, 1902; also vol. iv, part ii, 1905.

example, that if stimulated just at the beginning of diastole the heart muscle gives a small contraction and that the contraction, which may be obtained later by artificial stimulation, increases in extent the farther the diastole has progressed.

4. If the above statements are correct it follows that the store of energy-yielding material in the heart exists in some non-irritable form and that during the phase of diastole a portion is converted into an irritable form capable of being acted on by a stimulus.

5. The presence of certain inorganic salts is necessary for this transformation from the non-irritable to the irritable condition.

In order to picture the relations of the inorganic salts to this process the hypothesis which I have adopted as a heuristic principle to guide my own investigations, may be stated as follows: The well-nourished heart contains a large supply of energy-yielding material, which is in stable form, so that it neither dissociates spontaneously, nor can be made to do so by the action of external stimuli. It is possible that this stable, non-dissociable form consists of a compound between it and the potassium or the potassium salts, and that herein lies the functional importance of the large amount of potassium contained in the tissue. This compound reacts with the calcium or with the calcium and sodium salts, and a portion of the potassium is replaced and a compound is formed which is unstable. At the end of the diastolic period this compound reaches a condition of instability such that it dissociates spontaneously, giving rise to the chain of events that culminates in the normal systole. Before spontaneous dissociation occurs it may be hastened prematurely by an external stimulus, as we know to be the case when a mechanical or electrical shock is applied to the heart at any time after diastole has begun.

From this point of view the rôle of the calcium, or of the calcium and sodium salts consists in replacing the potassium and converting a part of the store of stable material into an unstable, easily dissociable compound. We are not obliged, therefore, to assume the existence of any specific inner stimulus. An hypothesis of this character accounts readily for some of the most characteristic features of the heart beat.

Each contraction must be maximal since it involves the dissociation of all the material existing in unstable form. The contractions must be rhythmic since, after each contraction a certain interval, which will be constant when the conditions are uniform, is needed for the production of more of the unstable material. At each systole the heart will exhibit a refractory phase, since the ready-formed, unstable material has been used up and the rest of the energy-yielding substance exists in a stable, non-irritable form. In terms of the hypothesis the refractory phase should pass off gradually as new, unstable material accumulates, and this we know to be the case, since a weaker stimulus is required to force the heart to contract the later it is applied in the diastolic phase.

Whether or not this or any other of the hypotheses described turns out to be correct, we may congratulate ourselves at least that the labors of the experimental physiologists during the last quarter of a century have added to our store of knowledge this new and important fact, namely, that the inorganic salts of the blood and lymph play an essential rôle in the production of the heart beat.

ULCER OF THE STOMACH: PATHOGENESIS AND PATHOLOGY.

EXPERIMENTS IN PRODUCING ARTIFICIAL GASTRIC ULCER AND GENUINE INDUCED PEPTIC ULCER.*

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CHICAGO.

DEFINITION.

By artificial gastric ulcer is meant ulcer produced by experimental means, as by some local, mechanical or chemical injury; by induced ulcer is meant ulcer produced by more indirect and natural means, such as feeding methods, as presented in this paper. The term peptic is retained on account of long usage.

INTRODUCTION.

Ulcer of the stomach is one of the most important

Fig. 1.—Deep ulcer in which perforation occurred, resulting in general peritonitis and death.

pathologic questions that engage the attention of scientific workers.

Clinically, it has led to the investigation of numerous conditions with which it is directly or indirectly associated, such as the local manifestations of pain, hemorrhage, perforaton; the secondary results, as adhesions, cicatrices, and contractions; carcinoma formed at the site of the ulcer, and, finally, the systemic conditions of toxemia, lowered vitality, anemia, etc.

The pathogenesis of gastric ulcer, however, is what has called forth the best scientific effort. The rôle that

* Presented before the International Medical Congress, Lisbon, 1906. The preliminary report on these experiments was first presented in the symposium on Gastric Ulcer before the American Gastro-Enterological Association, 1904, and withheld from publication for more careful revision and research. Presented before the joint meeting of the Chicago Pathological Society and Chicago Medical Society, March 21, 1906.

* From the Research Laboratory of the Turck Institute, Chicago.

cytolysis and autocytolysis play in the formation and persistence of ulcer must be recognized as an important one. It points back to the fundamental problem: What prevents self-destruction of the stomach; and, moreover, what prevents autocytolysis of all tissues of the body? That some sort of protection existed to prevent self-destruction was even recognized by the ancients, who attributed it to some supernatural power.

Stahl[1] regarded our protection to be the "sensitive soul." He states: "This very preservation of a thing essentially destructible by which its destruction through its own activity is prevented is exactly what we ought to understand by the common word 'vital.' In any case the fermentation which takes place in the alimentary canal is not an ordinary fermentation, such as occurs in a merely compound, not-living body, but a most special character is impressed on the change by energy of the soul."

John Hunter,[2] in his vital principle, expressed a similar idea, and in place of the "sensitive soul" he believed that the "vital power" protected the body by some inherent energy.

As cellular pathology developed, the word tissues was added to the same vital power of Hunter, and, as Riegel[3] expresses it, "The main reason why the stomach does not digest itself is unquestionably the vital resisting power of the tissues."

The conception of resistance of the tissue against the formation of ulcer has developed various ideas of local protection, either as a vital power residing in the cell or some secretion acting as a mechanical or chemical protection. Thus Vaughan Harley[4] thought the mucus acted as a protective coat of mail to the mucosa of the stomach, and Claud Bernard[5] believed that the regeneration of cells rapidly replaced those destroyed by the gastric fluid.

The modern idea of this local protection is shown in Weinland's[6] work, who holds that an anti-pepsin ferment residing in and as a part of the gland cells protects them from destruction.

A.—GENERAL PROTECTION.

The Sensitive Soul	Stahl
Vital Force	Hunter
"Vital Resisting Power of the Tissues"	Riegel
Alkalinity of the Blood	Pavy[7]

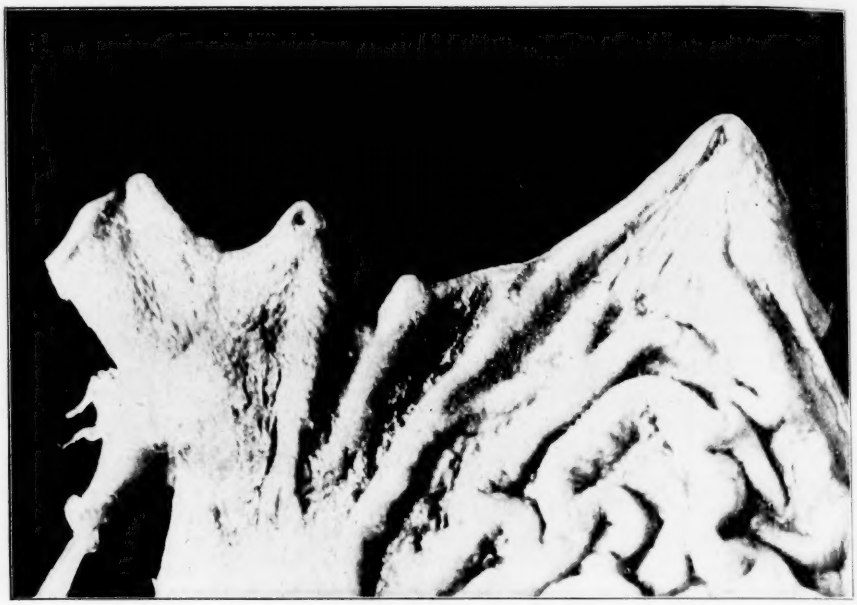

Fig. 2.—Deep ulcer, near pylorus, from which hemorrhage occurred, resulting in death. (The ulcer is at the bottom of the central diagonal sulcus.)

B.—LOCAL PROTECTION.

The Mucus Acting as a Protective Coat to the Mucosa	Vaughan Harley
Constant Reproduction of Exfoliated Epithelium	Claud Bernard
Antipepsin Ferment Residing in and as a Part of the Gland Cell	Weinland

From the large amount of experimental work on blood serum, by numerous investigators, we are able now to clothe our ideas of "protective bodies" in more technical and definite language. We may speak now of natural histogenic immunity, of hemolysins, of agglutinins, of precipitins, of cytotoxins, etc. We may go a step further in our understanding of this same histogenic immunity towards infectious diseases in the light of amboceptors, and of the alexins or complements, with their

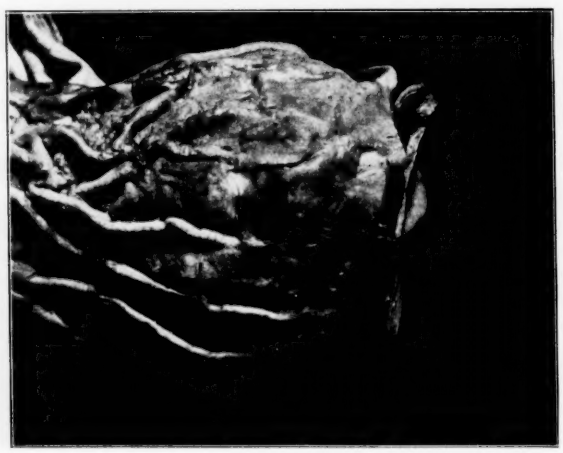

Fig. 3.—Multiple peptic ulcer, mucous surface, large ulcer in center. Smaller ones shown by depressions above.

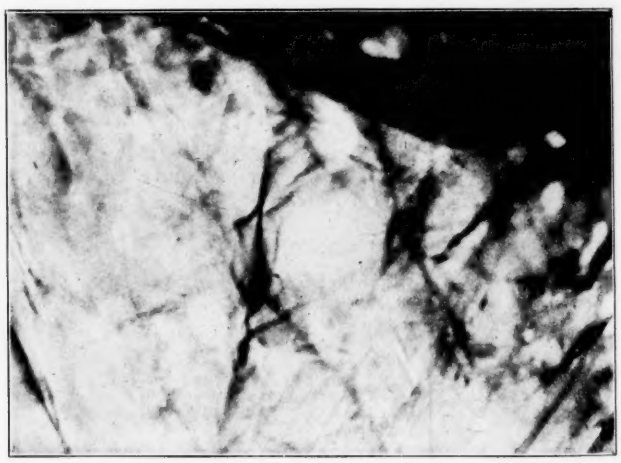

Fig. 4.—Same by transmitted light. Multiple ulcers shown by the light spots with light transmitted through the gastric walls. Note thinness of wall in center ulcer.

1. Stahl (1660-1734): "De mixti et vivi corporis vera diversitate."
2. Hunter (1728-1793): "The Digestion of the Stomach After Death," Phil. trans., 1772.
3. Riegel: "Diseases of Stomach," (Nothnagel's Practice), 1903, p. 561.
4. Vaughan Harley: British Review, vol. xlix, 1860.
5. Claud Bernard: Lecons de phys. Exp., Paris, 1856.
6. Weinland: Zeitft. f. Biolog., vol. xliv, 1903.
7. Pavy: Guy's Hosp. Reports, 1868.

respective toxophore, haptophore, or receptor groups. It is easy to understand what a clear field of investigation was opened in the study of natural and acquired immunity towards infectious diseases in the light of amboceptors and complements of toxins and antitoxins. It is no less evident to one investigating the problem of the

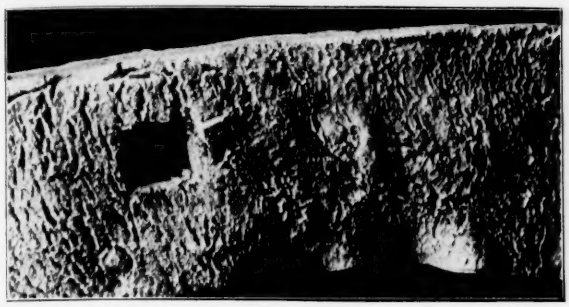

Fig. 5.—Duodenal ulcer, second portion.

production and persistence of gastric ulcer that we have here, not a question of local pathology, but of general blood pathology, of complement and amboceptor, of cytolysis and autocytolysis.

HISTORY OF EXPERIMENTS BY PREVIOUS INVESTIGATORS.

In the following classified list of methods adopted by various observers, it will be observed that most of the efforts to produce ulcer by artificial methods have been directed towards obtaining purely local cellular changes. This is apparently the direct influence of Virchow and his school in experiments and clinical observation of the pathology and pathogenesis of ulcer up to the present time. Virchow offered the hypothesis of vascular obstruction or aneurismal dilatation of vessels, but these are far too inconstantly found in ulcer.

Fig. 6.—Duodenal ulcer at jejunal junction.

Ulcers produced by some form of mechanical injury to the stomach wall heal even more readily than in other parts of the body, and attempts to produce ulcer, by chemical injury, either fail to produce the lesion, or the lesion heals more or less promptly. As anemia is frequently associated with ulcer, various attempts have been made to produce ulcer by combining resection and some mechanical injury, as resection of the mucosa, with bleeding, or the injection of laked blood or chemical substances, as practiced by Colnheim, Silbermann and others. If the anemia was sufficiently profound and the injury well-marked, ulcers were produced in the stomach, just as one would expect in injury to any part of the body.

The production of ulcer of the stomach by destroying areas in the brain, or section of the cord or vagi, can not be satisfactorily explained, but seems rather too violent and foreign to the conditions present in ulcer of the stomach. One explanation of the cause of ulcers produced by the above methods might be suggested by the work of Pawlow, who noted loss of motor power of the stomach after section of vagi, and of the recent work of Ophüls, who noted great dilatation of the stomach after section of both vagi below the diaphragm. Both these conditions would be very important factors in causing change in the bacterial growth in the stomach and intestines. How far this bacterial factor may be an ex-

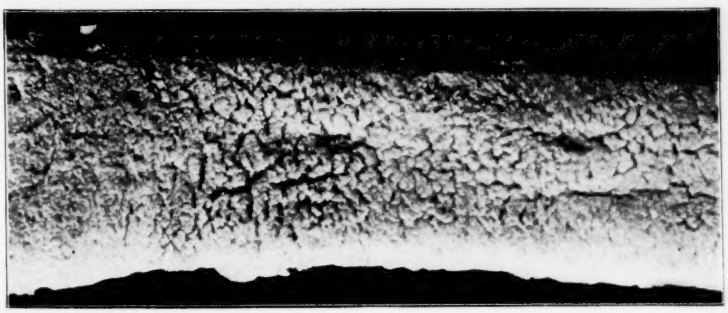

Fig. 7.—Duodenal ulcers, near pylorus.

planation of the ulcers produced after injury to the peripheral and central nervous system will require further investigation.

The following tables of the different authors' experiments in the production of artificial gastric ulcers are classified and arranged for convenience and ready reference. A few clinical and postmortem observations are included in these tables:

TABLES OF EXPERIMENTS BY PREVIOUS INVESTIGATORS.

A. MECHANICAL AND PHYSICAL INJURY.

		RESULT.
Ritter[8]	Violent bruises	
Decker[9]	Heat	Ulcer
Matthes[10]	Trauma (with 5 per cent. HCl)	Ulcer
Schmidt[11]	Trauma (with HCl)	
Körte[12]	Pinching stomach with clamps	Ulcer

B. CHEMICAL.

Roth	Crystals of nitrate of silver introduced into stomach	Ulcer

1. HCL AS A NECESSARY FACTOR.

Riegel[13]	HCl necessary	
Matthes[10]	Trauma (without HCl)	Negative
	Trauma (with 5 per cent. HCl)	Ulcer
Schmidt[11]	HCl and trauma	
Ewald[14]	HCl essential factor	

2. CONTRA HCL.

Pawlow[15]	Hyperacidity a consequence.	
Du Misinl[16]	Superacidity without significance.	
Ageron[17]	HCl may be persistently absent.	

8. Ritter: Beits. f. klin. Med., 1887, p. 12.
9. Decker: Berl. klin. Wochft., 1887, p. 21.
10. Matthes: Ziegler's Beitr., vol. xiii, 1897.
11. Schmidt: Inaug. Dissert., Leipzig, 1895, p. 6.
12. Körte: Inaug. Dissert, Strassburg, 1875.
13. Riegel: Zeits. f. klin. Med., vol. xii, p. 434.
14. Ewald: "Diseases of the Stomach," 1899.
15. Pawlow: "The Work of the Digestive Glands," 1902.
16. Du Misinl: See Riegel, "Diseases of the Stomach," 1903, p. 570.
17. Ageron: Münch. med. Wochft., July 29, 1902.

Kavetsky[18]	Synchronous ulcer of the stomach and bladder.	

C. GENERAL DYSEMIA.

Virchow[19]	Anemia and chlorosis.	
Quincke and Daetwyler[20]	Anemia by producing gradual hemorrhage and local trauma.	Ulcer, which healed with difficulty.
Silbermann[21]	Hemoglobinemia	Ulcer
Fütterer[22]	Hemoglobinemia	Ulcer
Cohnheim[23]	Hemoglobinemia by mechanical injury and injection of laked blood	Ulcers

D. DISTURBANCE OF LOCAL CIRCULATION.

Virchow[24]	Embolism, thrombi, aneurism or varicose veins.	
Klebs and Welti[25]	Thrombi.	
Panum[26]	Injection of emulsion of wax into femoral vein.	Gastric infarcts, ulcer.
Talma[27]	Ligation of esophagus and pylorus	Ulcer
Rindfleisch[28]	Venous stasis; prolonged ischemia.	
Axel Key[29]	Prolonged ischemia due to contraction of gastric muscle.	No experiments.
Müller[30]	Tied portal vein	Ulcer

E. INJURIES TO NERVES AND NERVE CENTERS.

Schiff[31]	Intersection of thalami and peduncles	Ulcer
Ebstein[32]		
Brown-Sequard[33]	Anterior corp. quadrigemina	Ulcer
Vidova[34]	Injection of Alcohol into vagus	Negative
Vidova[34]	Section of the sympathetic	Ulcer
Yzeren[35]	Section of the sympathetic with section of vagi below the diaphragm	Ulcer
Saitta[36]	Section of the sympathetic with section of vagi below the diaphragm	Ulcer
Ophüls[37]	Section of the sympathetic with section of vagi below the diaphragm	Ulcer
Koch and Ewald[38]	Section of cord, and 5 per cent HCl in stomach	Ulcer

Fig. 8.—Deep peptic ulcers of duodenum (first portion).

F. LOCAL INFECTION.

Cohnheim[23]	Injection. Infected suspensions of lead chromate	Erosions and ulcers.
Böttcher[39]	Infection as cause of ulcer	Opposed by Körte.
Nauwerck[40]	Infection observed at edge of ulcer.	

The following tabulated record of my experiments is introduced here, although many of the methods apparently come under the above classification, yet they are sufficiently distinct to permit a separate presentation:

AUTHOR'S EXPERIMENTS.

A. MECHANICAL.	RESULTS.
Excision of the mucous membrane. Also application of local irritants and removal of mucous membrane by nippers, observed through a permanent gastric fistula.[41]	No visible lesion.
Trauma and hemorrhage by wire brush. (Repeated for one month.)[41]	Hemorrhagic erosions.
Cardiac and pyloric ligations.[41]	
Partial ligations of portal vein.[41]	No erosion.
Ligations of veins of stomach.[41]	Erosions near ligation.

B. CHEMICAL.

Application of tannic acid, gastric juice to mucosa with the gyromele.[41 42 43]	Negative.
Application of chromic acid, silver nitrate crystals with gyromele.[41 42 43]	Negative.
Same; pyloric end partially tied.[41]	Hemorrhagic erosions.
Tannic acid daily for several weeks.[41]	Negative.
Mustard oil, large doses.[44]	Acute gastritis only.
Mustard oil for 14 months.[45]	Chronic gastritis. No ulcer.

C. LOCAL INFECTION.

Sarcinæ and yeast introduced into stomach; pylorus partially tied.[46]	Negative.
Stomach contents from infected stomach injected into dog's stomach through fistulous opening.[43]	Increased HCl. No ulcer.

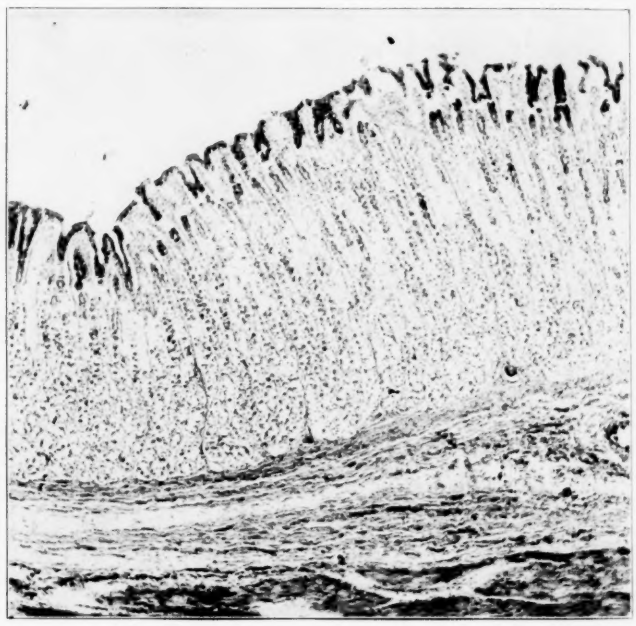

Fig. 9.—Stomach of dog. The mucosa is practically normal. The glandular structure is well shown and the surface epithelium is intact. (Low power.)

D. INJECTION OF TOXINS.

Diphtheritic toxin injected into stomach wall.[47]	No ulcer; pinhead hemorrhagic foci in duodenum.
Same.[47]	Same. Local necrosis near pylorus.
Diphtheritic toxin injected into mesenteric vessels.[47]	No ulcer; foci of necrosis after two weeks in duodenum and near pylorus.
Intravenous injection of extracts and emulsions of gastric mucous membrane.[48]	Necrosis of mucous membrane near pylorus.
Intravenous and subcutaneous injection of stomach contents from patients into animals.[49]	No ulcer.

E. SYSTEMIC DISTURBANCES.

Shock and infection. Laparotomy. Exposure of stomach to air three hours; repeated. Inoculation peritoneal cavity.[50 45]	No ulcer.

18. Kavetsky: Prag. Vratch., 1902, No. 24.
19. Virchow: "Anemia and Chlorosis."
20. Quincke and Daetwyler: Deuts. med. Wochft., 1882, p. 6.
21. Silbermann: Deuts. med. Wochft., 1886, No. 29, p. 497.
22. Fütterer: THE JOURNAL A. M. A., March 15, 1892; also Oct. 15, 1904.
23. Cohnheim: "Lehrbuch der Pathol. Anat."
24. Virchow: Virchow's Archiv., vol. v, p. 360.
25. Klebs and Welti: "Thrombi."
26. Panum: "Virchow's Archiv.," vol. xxv, 1862.
27. Talma: Zeits. f. klin. Med., vol. xvii, p. 10.
28. Rindfleisch: "Lehrbuch der Pathol. Anat."
29. Axel Key: Gurlt, Virchow's Jahr., 1871.
30. Müller: Erlangen, 1860.
31. Schiff: "Lecons sur la physiologie de la digestion," 1862.
32. Ebstein: Deuts. Archiv. f. klin. Med., vol. liv.
33. Brown-Sequard.
34. Vidova: Archiv. f. Verdauungsk., vol. viii, No. 3.
35. Yzeran: Zeits. f. klin. Med., 1901, xliii, 81.
36. Saitta: Gaz. degli. Osp. Milan, vol. xxi, 599.
37. Ophüls: Jour. Exp. Med., vol. viii, No. 1.
38. Koch and Ewald: Klin. der Verdauungsk, vol. i, No. 3, p. 122.
39. Böttcher: Dorpater Berichte, 1873.
40. Nauwerck: Münch. med. Wochft., No. 35, 1897.
41. Turck: "Experimental Observations on Erosions of the Stomach," Ft. Wayne Med. Jour. Mag., January, 1897.
42. Turck: Wiener med. Wochft., Nos. 1 and 2, 1895.
43. Turck: Medical News, April 4, 1896.
44. Turck: N. Y. Med. Jour., Oct. 25, 1902.
45. Turck: THE JOURNAL A. M. A., June, 1897; also N. Y. Med Record, Aug. 11, 1900; Wien. med. Wochft., No. 48, 1901.
46. Turck: THE JOURNAL A. M. A., March, 1896.
47. Turck: Trans. Chicago Path. Soc., April, 1903.
48. Turck: Medical Standard, Chicago, December, 1903.
49. Turck: N. Y. Med. Jour., Feb. 22, 1896.
50. Turck: Amer. Therapist, November, 1900.

Prolonged use of chloroform and ether; two to six hours.[51]	No ulcer.
Guinea pigs and rabbits closely confined in small cages.[52]	Six ulcers: two spontaneous, four by local lesions.

F. INJECTION OF PEPTONES.

Intravenous and subcutaneous injection of peptones for two to four weeks after removing portions of the mucous membrane of the stomach.	Six dogs: Two scars, two delayed healing, two negative.

In the above series of my experiments, most of which have been previously reported, those of injecting mustard oil into the stomach and those of animals kept in confinement, are of special interest.

In the experiments with mustard oil, increasing doses were injected into the dog's stomach at intervals of two to three days for nine to fourteen months. One hundred c.c. of a 1/500 emulsion of the oil was injected at the outset, but the dose was gradually increased, so that at the end of three months 125 c.c. of a 1/50 emulsion could be given, and later the oil was simply added to the dog's food.

Vomiting and acute gastric symptoms followed the earlier injections, but later no reactionary symptoms occurred. At the end of nine months dog No. 1 died. At the end of eleven months dog No. 2 died. No ulcer was found in the stomach or intestines in either dog No. 1 or dog No. 2. At the end of fourteen months dog No. 3 was chloroformed. The dog was emaciated. The stomach was dilated and occupied a large

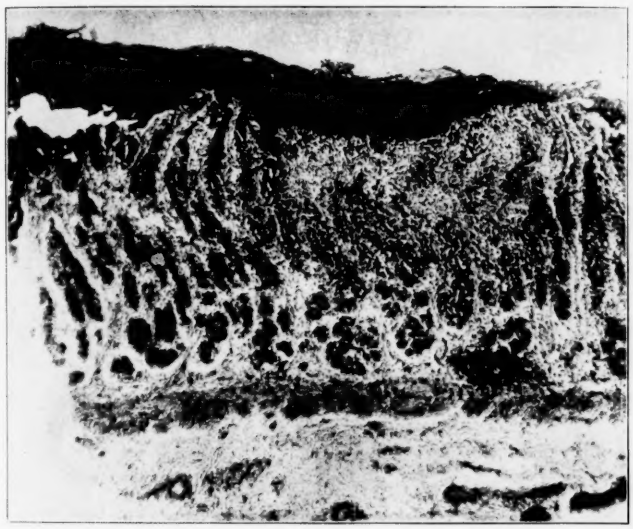

Fig. 10.—Stomach of dog, early stage. The black mass on the surface and the finger-like projection downward into the crypts is an accumulation of mucus, cellular débris, blood serum, etc. (Low power.)

portion of the abdominal cavity, the greater curvature extending to the line of the anterior superior spinous process. The mucous membrane in the fundus of the stomach showed etat mamillæ. Microscopic examination showed chronic gastritis. No ulcer was found in the stomach or intestines.

Failure after such radical means as the feeding of mustard oil for fourteen months demonstrated the futility of attempting to produce ulcer by simply local irritation.

The possibility of systemic disturbances, altered metabolism, impaired nutrition being etiologic factors in the production of ulcer led to the experiment of confining animals in very close quarters for a long period of time.

Ninety-six guinea pigs and 36 rabbits were used in the experiment, which was continued nine months. The animals were confined in small sterilized cages (made of wood, except the bottom, which was of wire netting), 4x6x6 inches. The top was closed by a hinge cover, light being excluded, but air admitted through two small holes on either side. The cages were placed in sterilized pans, in a solution of permanganate of potassium, and were sterilized every other day. The animals were thus restricted to a small allowance of air, light and exercise, but were given the usual amount of food, and kept in as sterile cages as possible.

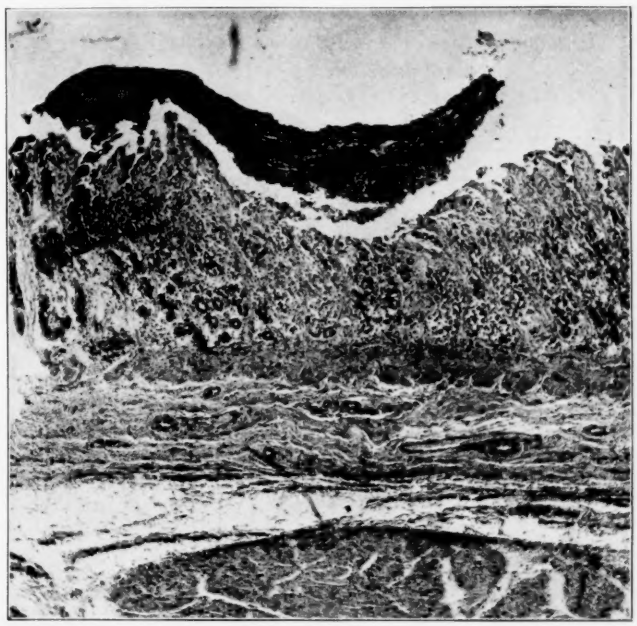

Fig. 11.—Stomach of dog, later stage, with necrosis of the mucosa. The plug is still adherent to the ulcer cavity. The surface epithelium has disappeared—disarrangement of glandular structure. (Low power.)

At the outset a blood count and hemoglobin estimation were made, and again after two to three months' confinement, and finally after seven to eight months. As soon as an animal

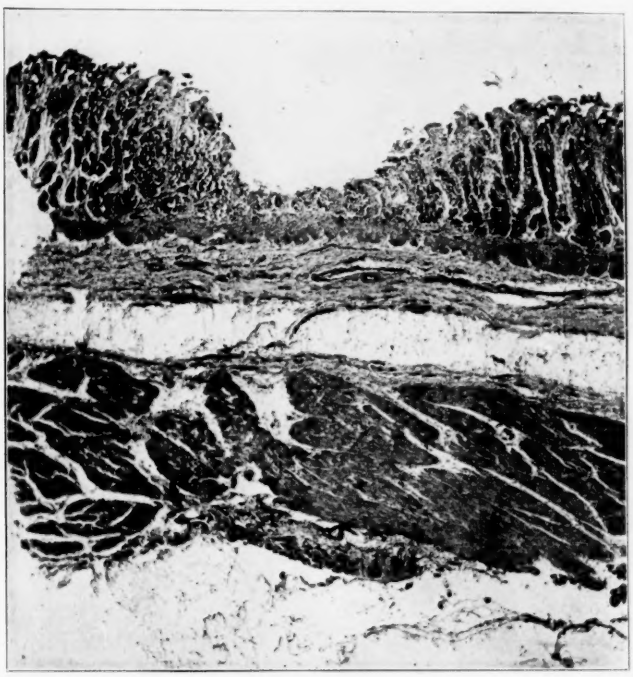

Fig. 12.—Stomach of dog. More advanced stage, with necrosis reaching almost the muscularis, exposing a small blood vessel. (Low power.)

showed any signs of infection it was removed. During the first two or three months the animals gained in weight as a result of deficient exercise and oxidation, but later became emaciated.

51. Turek: THE JOURNAL A. M. A., May 2, 1903.
52. Turek: Proc. C. Med. Soc., January, 1901; also Chicago Med. Rec., vol. xxi, No. 1, 1901.

Red Cells.		Percentage of Hemoglobin		Months.	Result.
Before	After	Before	After		
6,408,000	3,296,000	85	75	4	Ulcer
5,840,000	4,900,000	80	70	4½	Ulcer
6,410,000	4,850,000	85	60	6	Ulcer
4,992,000	4,200,000	75	60	5-½	Ulcer
5,120,000	4,250,000	70-75	60	5	Ulcer
5,360,000	4,120,000	80	65	6	Ulcer
6,200,000	3,130,000	85	65	6	No ulcer
5,450,000	3,800,000	80	50-55	5	No ulcer

Result, after nine months: All the rabbits died. Of the 96 guinea pigs, only 6 survived. In 4 of these animals ulcers produced by removing portions of the mucous membrane failed to heal. Two induced peptic ulcers were found in the other 2 guinea pigs.

Fig. 13.—Stomach of dog. Edge of ulcer reaching to the muscularis, showing marked degenerative changes with breaking down of the entire glandular structure. (Low power.)

For the first time, then, in the author's long series of experiments, induced peptic ulcers were formed, but in such a small per cent. of the animals that even positive results were of little value in solving the problem of the

Fig. 14.—Smooth walled ulcer. No inflammatory changes. (Low power.)

etiology of peptic ulcer. They suggested, however, the possibility that systemic conditions were important factors, that alterations in the toxic state of the alimentary canal, with consequent changes in the blood, might play some rôle in the formation of ulcers. The next step was to select some more definite means of modifying the normal conditions of the alimentary tract and general system.

Experiments were begun with *Bacillus coli communis* because it is the organism found normally present in such large numbers in the intestines, and is the organism which multiplies so luxuriantly in catarrhal and atonic conditions of the stomach. Morphologically and culturally no difference could be found between the strain of *B. coli* isolated from the stools of normal individuals, and that from cases of ulcer of the stomach. But the possibility of a difference in their pathology led the author to use in his experiments strains isolated from the feces of cases of ulcer of the stomach. The toxin of *B. coli* being intracellular suggested the experiments of using killed as well as living cultures. In my earlier experiments the bacteria were introduced directly into the circulation, but later they were fed the animals. By this latter method the bacterial status of the alimentary canal could be more directly modified, and a better approach be made to more natural conditions.

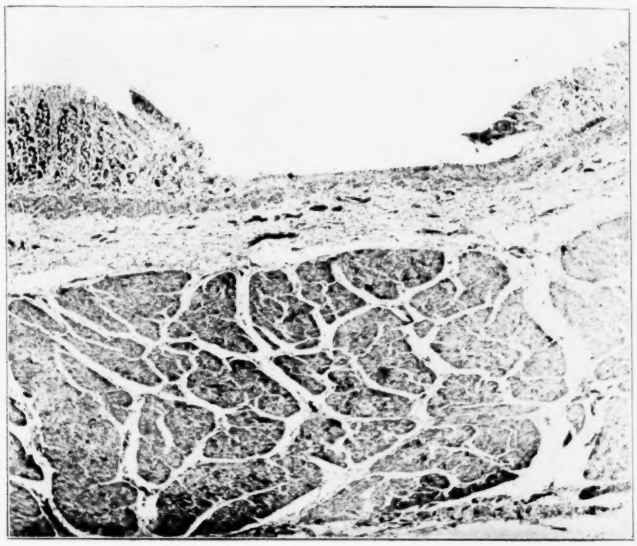

Fig. 15.—Ulcer with undermining of the mucosa. (Low power.)

Meat extractives were fed certain of the animals in connection with the bacteria, as will be seen by reference to the table of experiments with *B. coli*. It was found that *B. coli* grew most luxuriantly in media containing meat extractives, hence the possibility was suggested that a more active growth might be produced in an alimentary canal which contained meat extractives.

Positive results have been obtained thus far in every experiment in which cultures of *B. coli* were fed to dogs. The number and extent of the ulcers have varied, however, from a few ulcers in the duodenum to numerous typical peptic ulcers in the stomach. In one case death resulted from hemorrhage from a large ulcer at the pylorus.

To give these positive results true scientific value, it was essential to find out the percentage of gastric ulcer in a large number of dogs not experimented with.

The dogs were obtained from two different sources—one, healthy dogs that had been asphyxiated at the city pound; the other, dogs that had died from disease, injury, poisoning, etc. From the first source, 189 dogs were examined; from the second, 82, making a total of 271. Antemortem observations as to the general condition of the dogs could be made at the city pound, because the dogs were kept there ten days before being killed. The stomachs and intestines, after being removed from the bodies, were treated in a uniform manner, e. g., opened, washed in weak creolin solution, hardened for six hours in

dilute formalin, and finally examined very carefully macroscopically. Of the 189 healthy dogs examined, few showed any changes in the alimentary tract; of the 82 dying from disease, poisoning or injury, many showed diseased conditions of the various organs. But no peptic ulcers were found in either the stomach or intestine of any of the 271 dogs examined. Absolutely negative findings of peptic ulcers in both the healthy street dogs and the diseased animals shows that the percentage of ulcers present in dogs is at most exceedingly small.

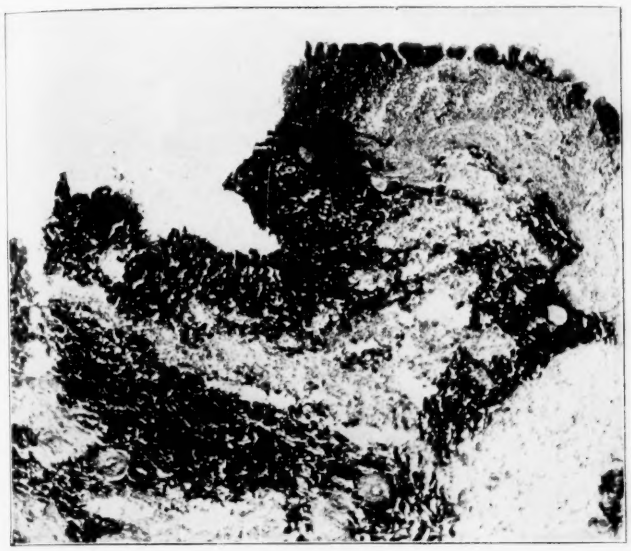

Fig. 16.—Destructive changes in the submucosa, showing necrotic areas which refuse to stain.

EXPERIMENT: WITH BACILLUS COLI COMMUNIS.

I. INOCULATION EXPERIMENTS WITH DOGS.
   1. Intravenous injections of living cultures of *B. coli communis.*
   2. Intravenous injections of cultures of *B. coli communis* killed by heat.

II. FEEDING EXPERIMENTS WITH MICE AND RATS.
   1. (a) Feeding raw beef.
      (b) Feeding raw beef and *B. coli communis.*
   2. (a) Feeding beef extractives.
      (b) Feeding beef extractives and *B. coli communis.*
   3. (a) Feeding extract free beef.
      (b) Feeding extract free beef and *B. coli communis.*

III. FEEDING EXPERIMENTS WITH DOGS.
   1. Feeding bouillon culture of *B. coli communis.*
   2. Feeding cultures of *B. coli communis* and beef extract.
   3. Feeding beef extract.

EXPERIMENTS IN INJECTING LIVING CULTURES OF B. COLI COMMUNIS INTO DOGS AND RABBITS (I, 1).

FIRST SERIES OF INJECTING EXPERIMENTS.

Methods.—The strain of *B. coli* used was isolated from water and from the feces of cases of ulcer of the stomach.

The injections were made subcutaneously, intraperitoneally, and into the internal jugular vein, at intervals of two to five days. Six dogs and twelve rabbits were used in this experiment. After a period of one month, the abdomen was opened under aseptic precautions, and an artificial ulcer made by removing a portion of the mucous membrane of the stomach. The injections were continued, and at the end of two weeks the abdomen was again opened.

Results.—In most of the animals the lesion was entirely healed, so that not even its site could be detected. Scars were visible in some of the stomachs and defective healing in others. In four animals ulcers were found, which did not show a tendency to heal.

SECOND SERIES OF INJECTING EXPERIMENTS.

Methods.—The strain of *B. coli* used was isolated from the feces of cases of ulcer of the stomach.

The injections were made into the external jugular vein of dogs and were continued for six months, at intervals of two to ten days. Four c.c of a twenty-four hour bouillon culture of *B. coli* was used for two months; then the amount was increased to emulsions of the surface growth of two petri dishes, and later of four petri dishes.

Results.—The reaction to the injection at first was anorexia and vomiting, with general lassitude for a day or two. After an interval of ten days the reaction to inoculation would be considerable, but would be much less pronounced, if the inoculation was then repeated in a day or two. Later, that is, after three months of such inoculation, no reaction could be obtained, even though large numbers of bacteria were introduced.

B. coli was agglutinated by the dog's serum in dilution 1/5,000 ten days after the first inoculation.

Operation.—An artificial ulcer was produced in the stomach four and one-half months after the first injection. The injections were continued two months longer.

Postmortem.—The dog was chloroformed three months after the production of the artificial ulcer, and the stomach and intestines examined for ulcers. The lesion produced at the time of the operation had entirely healed. No ulcers were found in the stomach. In the duodenum and ileum numerous oval-shaped raised areas were found, with depressed centers resembling Peyer's patches. The entire bowel was very pale, with the exception of a few hyperemic areas. Two irregular patches of erosion were found in the ileum. No ulcers were found in the intestines.

EXPERIMENT IN INJECTING INTRAVENOUSLY DEAD CULTURES OF B. COLI COMMUNIS (I, 2).

Methods.—The strain of *B. coli* was isolated from the feces of cases of ulcer of the stomach. The injections were made into the external jugular vein, and were continued for four months, at intervals of two to four days. Emulsions of the surface growth on two to eight petri dishes were used after being boiled to kill the bacteria. The constitutional reaction to inoculation was much less than in the case of living cultures.

Operation.—An artificial ulcer was made in the stomach three months after the first injection. The external wound healed readily. The injections were continued one month longer, and then the dog was chloroformed.

Postmortem.—No ulcers were found in the stomach. The duodenum showed six typical peptic ulcers, about 5 cm. from the pylorus. The ulcers were grouped together, somewhat oval in outline (6x4 mm.), transverse to the long axis of the bowel, with abrupt margins, and floor smooth and covered with a mucous-like accumulation (Fig. 8).

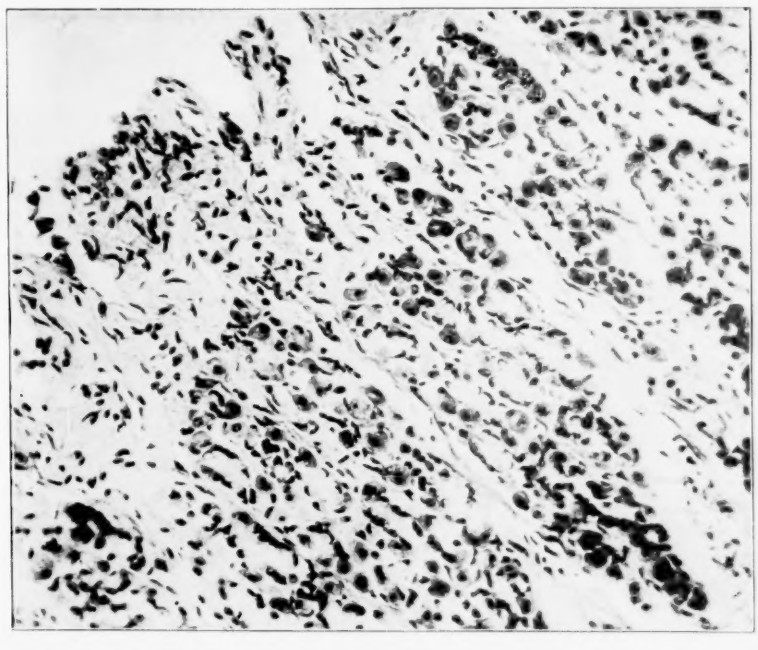

Fig. 17—Showing the increased proliferation parietal cells and the degenerated, broken down and disarranged chief cells. Surface epithelium disappeared. (High power.)

FEEDING EXPERIMENTS WITH MICE AND RATS (II).

The object of these experiments was to determine the relative effect of the feeding of *B. coli communis* with and without meat extractives.

Methods.—The meat juice obtained by pressing raw beef was used in the experiments with beef extractives. The extract free beef was prepared from the pressed meat, and after being steamed under 15 pounds' pressure for one hour was again pressed and fed the rats dry.

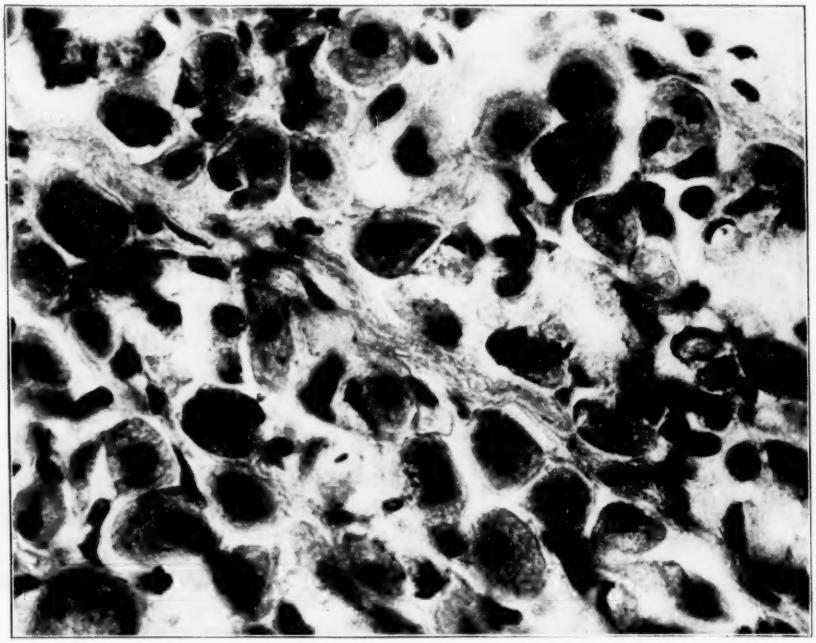

Fig. 18.—Showing the parietal cells. They are larger and increased in numbers, between them are seen a few degenerated chief cells. (Oil immersion, 1/12.)

Bouillon cultures of *B. coli* were added to the raw beef in one experiment, to the beef extract in a second experiment, and to the extract free beef in a third experiment. The rats were given as much of the cultures as they would take. As controls a second series of rats were given raw beef, beef extract and extract free beef respectively. The experiment was continued one month.

Results.—At the end of a month the rats fed on extractives and extractives containing *B. coli* died. The other rats of the series were killed at the same time for comparison.

During the course of the experiment little if any difference was noted in the behavior of the rats fed meat and extract free beef with and without bacteria. The extractive fed rats showed some bloating of the abdomen early in the experiment. They drank readily all the extractives and cultures fed them, but appeared restless and hungry.

Postmortem.—Negative so far as macroscopic appearances were concerned in all except the extractive fed rats. These showed a marked decrease in fat. Their organs, especially the liver, were pale in color.

FEEDING EXPERIMENTS WITH DOGS (III).

FEEDING BOUILLON CULTURES OF B. COLI COMMUNIS (III, 1.)

Methods.—Increasing quantities of a 24 to a 48 hour growth of *B. coli communis* in bouillon were fed daily to the dogs, together with an ordinary meat diet, beginning with small amounts and increasing to 1,000 c.c. Watery emulsions of the surface growth on agar plates were occasionally substituted.

The strain of *B. coli communis* used was obtained from the feces of cases of ulcer of the stomach. The length of time of feeding the dogs varied, in one case being 81 days before death occurred, and in another case 102 days.

RESULTS OF THE FEEDING.

Bacteria in Blood: The blood remained sterile during the course of the experiment. The heart's blood at death was also sterile.

Bacteria of the Stomach: Nearly pure cultures of *B. coli communis* were obtained from the stomach 9 hours after each feeding of the bacteria.

Effect on the Blood.—Agglutination: *B. coli* was agglutinated by the dog's serum in dilution 1 to 500 and slightly in dilution 1 to 1,000 after 20 days' feeding. Marked hemolysis of the blood was present 20 days after feeding.

Coagulability: Coagulation of the blood was slow, the clot formed being soft.

General Constitutional Reaction: The dog appeared perfectly normal until one week before death, when symptoms of hemorrhage gradually developed, e. g., coffee ground vomit, tarry stools, loss of strength and appetite, lowered temperature, with death in shock.

Postmortem.—Dog No. 1 (Series III, 1). Liver and kidney showed marked venous congestion. Stomach and intestines contained coffee-colored liquid. Stomach had large blood clot at pylorus and some coagulated blood over mucous membrane. Multiple peptic ulcers were found in the stomach and one large one at the pylorus, from which the hemorrhage occurred, resulting in death (Figs. 2, 3, 4).

Dog No. 2 (Series III, 1). A dog which had been under feeding experiment with *B. coli* was placed under anesthesia, abdomen opened, stomach found flabby and a small well-formed ulcer was found on anterior wall near the pylorus, which perforated on inflation of the stomach with air; the contents escaped through the opening, which showed sharpened edges ("punched out" appearance) the size of a dime; about a pint of fluid was found in the stomach; free HCl absent; peptones present.

Dog No. 3 (Series III, 1). Dog fed 500 c.c. bouillon cultures of *B. coli* daily for two months, then chloroformed.

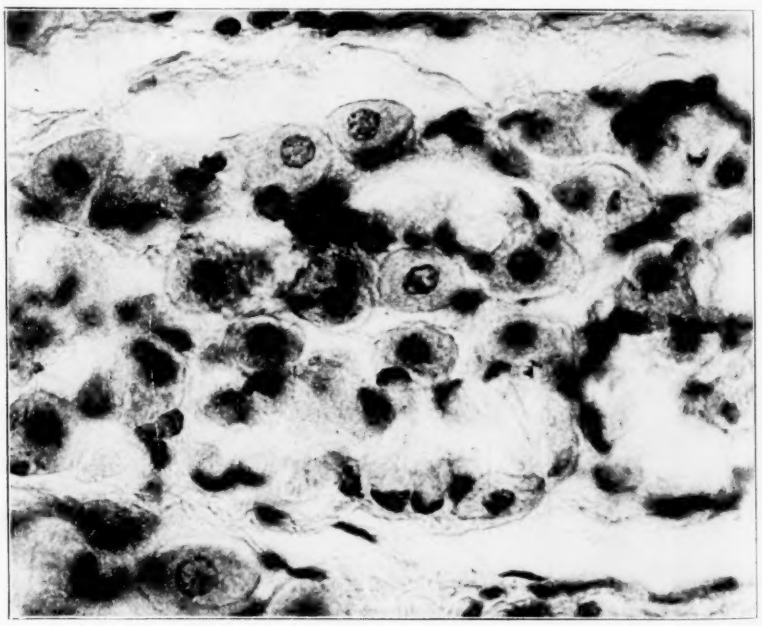

Fig. 19.—Showing the parietal and chief cells. Note the large size of the parietal cells, showing beginning degeneration; also, the crescent shaped nuclei of the degenerated chief cells. (1/12 oil immersion.)

At postmortem the stomach was found to be large, full of food. Mucous membrane hyperemic. In the pylorus were 6 round, pale colored raised areas about 3 mm. in diameter, with central depressions, margins raised and somewhat irregular in outline. No ulcers were found in the stomach.

Intestines.—Mucous membrane pale. In the duodenum were

three typical peptic ulcers in the wall opposite to the mesenteric attachment longitudinal to the axis of the bowel, circular in outline when stretched. Floor of the ulcers was smooth, clean cut, margins raised and abrupt (Fig. 5). No ulcers were found in the ileum or colon.

FEEDING BOUILLON CULTURES OF B. COLI COMMUNIS AND BEEF EXTRACTIVES (III, 2).

Methods.—Beef extract was fed the dogs in saturated watery solution or in capsules, approximately 25 gm. being fed daily, together with an ordinary meat diet. Cultures of *B. coli communis* were fed as in experiments III, 1. The length of time of feeding the dogs was 104 days.

RESULTS OF THE FEEDING.

Effect on the Blood: Experiments III, 2, same as in experiments III, 1.

General Constitutional Reaction.—Diarrhea was produced in three days, which lasted four to six days and was more pronounced in the case of the *B. coli* fed dog. Whenever during the course of the experiment the above feeding was stopped for a few days, there was a recurrence of the diarrhea on beginning the feeding again. With the exception of the above diarrhea both dogs remained perfectly healthy for three months, then the *B. coli* fed dog began to show some slight indisposition.

Operation.—After 100 days' feeding of beef extract and *B. coli communis* an exploratory operation was made, but no ulcers of the stomach were found. An artificial ulcer was made by removing a small portion of the mucosa in the posterior wall near the pylorus. Three days after the operation the dog died of peritonitis resulting from perforation of the artificial ulcer (Fig. 1).

Postmortem.—General peritonitis. Perforation of the stomach at site of artificial ulcer. Perfect closure of incision in anterior wall of the stomach made at the time of operation, with no signs of inflammation there. Venous congestion of liver and kidney. Duodenum showed 13 peptic ulcers (Figs. 6 and 7).

HISTOLOGIC EXAMINATION OF LIVER, KIDNEY, STOMACH AND INTESTINES OF DOG OF EXPERIMENT III, 1.

Dog died of hemorrhage from pyloric ulcer after being fed cultures of *B. coli* for 81 days.

Liver.—Marked degenerative changes are present in the liver cells of the central portions of the lobules. The liver columns here are broken up into one or more cells. The cells have a shrunken appearance, are irregular or roundish in outline, stain diffusely with eosin, or are broken down as granular or vacuolated masses. In these cells the nuclei have disappeared, while in others the nuclei appear as faintly bluish irregular rings. In the peripheral portion of the lobules, the liver cells contain numerous small vacuoles, are somewhat granular, and stain fairly well. The liver columns throughout are compressed by the congestion of the intertubular capillaries. Many leucocytes are seen in these vessels.

The blood vessels in the portal system are all engorged with blood. There is no increase in the stroma of the portal system, but it has an edematous appearance. The bile ducts are closed by their swollen epithelial cells.

Kidney.—Histologic examination of the kidney sections also shows marked degenerative changes. These are present largely in the secretory (convoluted) tubules. The epithelial cells lining these tubules are swollen and cloudy and fill the lumen of the tubules; others are granular and vacuolated; their outlines have disappeared, are fused together and broken down. In these cells the nuclei stain very poorly or have disappeared. The glomeruli have a swollen or cloudy appearance. The capillaries of the tufts are engorged with blood. The glomeruli are separated from Bowman's capsule, the spaces of which are filled with granular detritus.

The tissue throughout has an edematous appearance. The intertubular capillaries are all distended with blood.

Intestine.—Histologic examination of the sections from swollen Peyer's patches shows acute catarrhal changes with marked swelling of the follicles. The surface of the mucosa is covered with a bluish-stained, viscid mucous material in which are intermingled many detached epithelial cells, some leucocytes, red blood cells and bacteria. Some of the surface epithelial cells have an elongated appearance, the ends of which are lost in the exudate. The glands are all swollen and filled with bluish homogeneous material. The goblet cells are swollen and filled with mucus. The capillaries in the mucosa are all engorged with blood. The Peyer's patches are well defined and swollen. There is a great increase in lymphoid cells in the follicles as well as surrounding the follicles infiltrating the surrounding tissue. The central portions of the follicles are paler and stain pinkish with eosin, due largely to an increase of the epithelial cells, many of which are undergoing degeneration. There are no changes in the other coats except the engorged blood vessels.

Stomach.—For histologic examination, sections were taken from various areas of the stomach wall, e. g., those which showed typical ulcers; those with slight defects in the mucosa, and others in which no changes could be detected with the naked eye. The tissues were hardened in bichrom-acetic-alcohol imbedded in paraffin and stained with the usual stains, hematoxylin and eosin, polychrome methylen blue and toluidin blue, etc.

For the sake of clearness those sections will be described first which appear almost normal and show the least changes, followed by those which show changes of a more marked character. As seen in Figure 9 the mucous membrane has a normal appearance; the glandular structures are all fairly well preserved. Here and there the surface columnar epithelial cells are disarranged or entirely broken away (possibly due to the technic), exposing the connective tissue stroma of the columns. The stroma in the mucosa appears normal in amount and shows no changes. The capillaries are tortuous, distended with blood and plainly seen beneath the surface and the deeper portions of the mucosa. The chief cells of the glands do not show very well and their arrangement is somewhat broken up; otherwise they appear normal. The parietal (acid) cells are prominent, large, stain well and show an occasional mitotic figure or a deeply stained nucleus. In certain areas they appear to be increased in number.

Catarrhal Stage (Fig. 10.)—In tracing the different stages of the formation of ulcer, the catarrhal stage appears to be the earliest. First we find the surface of the mucosa covered by a more or less homogeneous pink (eosin) stained material, which has a resemblance to serum and in which are seen many red blood corpuscles, a few leucocytes, fragments and débris of detached columnar epithelial cells and many long bacilli. In other sections the material on the surface is made up of bands or layers, staining blue or bluish red with polychrome methylen blue and toluidin blue. From the staining reactions and appearance this material consists largely of mucus. These mucous bands also dip down into the neck of the glands, almost to one-half of their depth, and on close examination with the high power are shown to be intimately connected with the columnar epithelial cells. The surface epithelium and the cells lining the glands are well preserved, especially in the deeper portions of the mucosa.

In some areas, the surface cells are detached in groups and have a swollen appearance. The protoplasm of the cells is vesicular and vacuolated. Their shape is oval, elongated, spindle-shaped and tortuous. They usually have a greatly elongated and drawn out appearance like strings. The nuclei of these cells have an elongated and flattened appearance, and stain diffusely. These elongated cells become lost or appear to be intimately connected with the mucous bands which cover the surface of the mucosa and which fill up the glands themselves. As a result of the accumulation of this material, the glands are greatly distorted, the necks or openings of the glands widened or pressed apart. The deeper glands in the mucosa, also show a swollen appearance, their lumen being closed by the swollen cells. The protoplasm of these cells stains reddish blue (polychrome methylen blue) and is highly granular. The stroma of the mucosa has a swollen edematous appearance. In some areas there is a great infiltration with red blood corpuscles and a few leucocytes. All the blood vessels (smaller veins and capillaries) in the mucosa and submucosa are engorged with blood. The muscularis is normal.

From the above description it will be seen that we have in these sections, first a great outpouring of mucus, some serum and red blood corpuscles, followed by desquamation of the surface and lining cells of the glands, and later a mucoid degeneration of the cells themselves, which become entangled and intimately connected with the mucous secretion of the surface, and through various influences are easily detached or broken away from their lining, leaving defects underneath.

The further process with loss of the glandular tissue is the next step in the formation of ulcer which can be seen in another series of sections taken from a different area of the stomach walls, and which is shown well in Figures 11 and 12.

As shown in the photographs, there is a necrotic mass fitting into the concavity of the mucosa or supposed ulcerated area. In some sections the base of the concavity in the mucosa reached to the muscularis. The necrotic mass may still be connected to the mucosa by bands or may lie loosely attached, giving the edges a ragged appearance. With the high power the necrotic mass is seen to be composed largely of detached, proliferated and broken-down cells derived from the mucosa, and is made up of thick bluish stained bands, in which are entangled epithelial cells, acid or parietal cells, red blood corpuscles, and connective tissue cells. The glandular structure beneath the necrotic mass on either side is greatly disarranged and has lost the glandular outline.

The epithelial cells (chief cells) are scattered irregularly throughout the stroma (Fig. 17). They show marked degenerative changes; are small and irregular in shape; their protoplasm is vacuolated and the cell body deformed or compressed, while their nuclei are small, elongated, distorted and pale or refuse to stain. These chief cells seem to be crushed out of existence largely by the acid or parietal cells. The latter are so numerous that they almost replace the entire field of the mucosa and are proliferating in large numbers. The proliferation of the parietal cells is a marked feature in all these sections (Figs. 17, 18, 19). Mitotic figures are very numerous; many of the cells contain two nuclei. They vary in size, being sometimes two and four times their natural size. Hand in hand with proliferation of these cells there are also degenerative changes going on. The protoplasm stains deeply or poorly, or may be granular or broken up. Some cells are vacuolated and swollen; their nuclei appear vesicular, granular and have a pale and distorted appearance. These cells in some areas are so numerous that 50 can be counted in a single field with the high power. The connective tissue stroma in these areas is disarranged or broken down by the proliferated cells. Underneath the necrotic mass the stroma has lost its usual character; it is looser in texture, fibrillar or homogeneous and granular and refuses to stain well; throughout the stroma in these areas there are hemorrhagic extravasations. As the various cellular elements break down, the loosely fibrillar stroma collapses and later also breaks down, leaving larger and smaller defects in the mucosa.

Some distance away from this area the stroma appears somewhat increased. The surface epithelium has more or less disappeared or become detached, exposing the stroma underneath. Here also is active proliferation of the parietal cells; they are seen in solid columns, one on the other, while the chief cells are disarranged and imbedded between the parietal cells. The chief cells are small, irregular, vacuolated and distorted with peculiar vesicular nuclei, or they may be so overwhelmed by the parietal cells that their outlines are lost.

The mechanical factor in the destruction of the chief cells by the proliferated acid cells is only a secondary feature.

Primarily marked cytolytic changes are to be noted in the chief cells themselves. In areas where the glandular structure is fairly well preserved, the chief cells may still be attached to the basement membrane, or if detached, lie loosely in the lumen of the glands. Here the chief cells are small, distorted and shrunken, with almost complete loss of protoplasmic contents. Their nuclei are peculiarly distorted into half-moon shapes and stain faintly, the cells appearing in areas as shadow ghost cells. These changes are purely cytolytic.

Other sections of this series show more advanced stages of the same process. As seen in Figure 12, the necrotic mass has dropped out or broken away, exposing a more or less well-defined, irregular smooth ulcer, reaching almost to the muscularis and exposing at the base a larger sized blood vessel, which is broken down, showing how hemorrhages occur. Otherwise the changes are as described above. There are no changes in the submucosa or muscularis except engorgement of the veins and capillaries with blood.

DESCRIPTION OF THE TYPICAL ULCER.

The typical ulcer, as shown in Figures 13, 14, 15, is a well-defined smooth-walled concavity. It gradually slopes inward and downward from either side to the base at the muscularis mucosa. In some sections the concavity is more or less square, or somewhat irregular in outline; in others the edges may be overlapping with undermining beneath. The edges or walls of the ulcer as a rule are smooth and consist of remnants of the stroma. It is a poorly stained or colorless loose fibrillar, almost fibrin-like, homogeneous or granular material, in which are imbedded round, oval or elongated nuclei, fragments of epithelial cells especially parietal cells, which in certain parts are fairly well preserved and stain well. There are no inflammatory changes of any kind present. The same appearance of the stroma is noted some distance from the ulcer. The surface of the mucosa has the same appearance as the edges of the ulcer. The surface epithelium has all disappeared. The deeper glands show changes as described in previous specimens. The chief cells are disarranged and crowded out by the large increased number of the parietal cells. The deeper glands are fairly well preserved, but have a swollen, cloudy and granular appearance.

The outline of the cells has disappeared and the individual cells have fused together, so that the gland is composed of a coarsely granular mass, through which are scattered deeply stained nuclei. Some of these glands in cross section show the early changes in the parietal and chief cells. The chief cells are swollen, opaque or coarsely granular, while the parietal cells show beginning proliferation. They stain intensely pink (eosin), are increased in size, and crowd or press the chief cells inward into the lumen of the glands. In the upper portion of the mucosa the glandular outline becomes gradually deranged. The parietal cells are increased in number, while the chief cells crowded in between are small, appear as shadows or have disappeared. Usually nearer the ulcer, both kinds of cells are scattered irregularly through the tissues. Degenerative changes are seen in both kind of cells, but they are more pronounced in the chief than in the acid cells.

SUMMARY.

According to my experiments the factors concerned in the production and persistence of ulcer of the stomach

and duodenum appear to indicate a dual condition. Some toxic condition seems to be produced which overcomes natural resistance, resulting in cytolysis, and possibly some chemical substances formed within the alimentary tract, which when absorbed may neutralize the protective bodies in the blood and tissues resulting in autocytolysis.

This hypothesis must present itself after a careful study of the local and systemic changes that take place in the production of induced peptic ulcer. In my experiments in feeding cultures of the colon bacillus, pronounced changes were revealed in the blood and tissues. Agglutination of *B. coli* by the dog's serum in high dilution was noted; hemolysis of the blood was evident; cytolysis and autocytolysis of the cells of the mucous membrane of the stomach, of the kidney and of the liver were marked on microscopic examination. But there was no bacteriemia, no inflammatory reaction in the form of round cell infiltration such as one would expect in a reactionary inflammation induced by pyogenic micro-organisms or toxins. It was not the picture of reaction to an infection, not the picture of a local, acting agent, but rather of a systemic condition, and of an induced cellular change.

What have we accomplished by our experiments? Gastric ulcers have been produced by other investigators, as will be seen by reference to the literature, but for the first time we have, by our feeding experiments, brought about spontaneous or induced peptic ulcer in the stomach and duodenum. We are as yet at the experimental threshhold, for our experiments have been comparatively few in number, but a percentage of 100 in our results signifies a true grasp of an etiologic factor. We are at least justified in saying that we have now a firm working basis for the further investigation of the pathogenesis of gastric ulcer. There are now a number of problems before us under investigation. Perhaps the widest field is opened in the study of the blood changes in these animals. Further determinations must be made of the hemolytic, agglutinating, bacteriolytic and phagocytic strength of the blood, and its coagulability, reaction, the action of the serum on digestion, the hemoglobin curve, the number of red and white blood corpuscles and the differential count of the leucocytes. It is of prime importance that the pathology of ulcer be further studied by histologic examinations of the ulcers at various stages of their development, that an examination be made also of the liver, kidney, spleen, lymph glands and bone marrow. The problem of altered metabolism must be studied by an analysis of the urine, feces, stomach contents, etc. It must be determined also whether the feeding of bacteria other than *B. coli* will produce ulcer, and whether all animals are equally susceptible.

CONCLUSIONS.

1. Ulcer of the stomach and duodenum can be produced in dogs by feeding *B. coli communis* for a variable length of time.

2. We have now for the first time a firm basis by which to solve the finer or underlying etiology of ulcer.

TRYPSIN IN MALIGNANT GROWTHS.

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CHICAGO.

Following the experiments of Beard of Edinburgh with the use of trypsin in Jensen tumors in mice and his suggestion for the use of trypsin in carcinoma, many attempts undoubtedly are being made at present with trypsin in inoperable malignant growths.

I have used trypsin in seven cases of inoperable carcinoma in different parts of the body and in one inoperable round-cell sarcoma of the thigh. I began the work ten weeks ago, and in some of the cases continued the injections for six weeks. All except one were hopeless cases from the standpoint of operation or *x*-rays, but in none of them was cachexia marked. I have used Fairchild's sterilized trypsin solution with the commercial name of *injectio trypsi*, which, I believe, was the preparation used by Beard. Beard's successful dose of one drop in mice is equivalent to 600 drops in an adult of 150 pounds weight. I began with injections of from 5 to 10 drops daily, and in some cases rapidly increased it to a maximum dose of 60 drops daily.

The results can be readily epitomized. Sometimes the doses—whether small or large—caused little pain and no subsequent irritation at the site of injection; in one or two patients there was bitter complaint occasionally after an injection; frequent inflammatory swellings resulted, and in six or eight instances abscesses developed at the site of injection. These developed several days after the injections, and I believe the question of accidental infection can be eliminated because the injections were given with scrupulous attention to aseptic technic and other patients who were having hypodermic injections at the same time of other drugs developed no abscesses. The abscesses which formed began as ordinary phlegmonous swellings. When they opened there was a discharge, not of ordinary pus, but of a thick, sticky, almost transparent serous fluid containing broken-down cheesy masses. After evacuation of an abscess there was left an unhealthy sinus with dirty-grayish, flabby walls, and in three or four instances these enlarged until they formed unhealthy, deep, indolent sinuses of the diameter of a finger or larger. These are slow to heal, but are painless.

I think that in one case in which there was a circumscribed mass of carcinoma in the pectoral muscle on the front of the shoulder there has been very distinct benefit from the injections. In this case there was a phlegmonous swelling which was opened with the discharge of more than two ounces of fluid and broken-down tissue, but the opening did not become larger and the cavity is now healed. As a result of the procedure the carcinomatous mass has disappeared as though it had been digested. I believe that in this case positive benefit has been done.

In the other cases I believe appreciable harm has been done to the patients. In several instances after large injections the patients have had chills. Except for these chills, there has been no immediate constitutional effect; but in all the patients who had numerous injections cachexia has developed and they have failed more rapidly than they were failing before. The experience has been so uniform that I have no doubt the trypsin has done the patients harm. The one case in which there has seemed to be benefit showed only a circumscribed mass, and in a similar case I should try trypsin again, but unless I could hope with a few injections to destroy a localized mass I should not at present feel justified in using the remedy. In none of the other cases has there been any appreciable influence on the neoplasms.

I know that so short and so small an experience is in no way convincing, but, as it has forced on me some conclusions and as there are no published reports on the effect of trypsin in human carcinoma, I venture to believe the experience is worth recording at this time.

Special Article

THE PHARMACOPEIA AND THE PHYSICIAN.

CHAPTER XXIV.

Parasiticides and Antigonorrheics.

It will be convenient to consider under this head, agents used for parasites other than bacteria, which infest the skin and intestines, together with a brief reference to the antigonorrheics.

Cleanliness prevents nearly all hurtful skin parasitism, and the only one which we shall consider here is that of the pediculi, since other forms are commonly treated more advantageously by the specialist.

The louse which infests the head requires no medication, since it is easily removed with a fine comb and thorough washing with tar soap. The ointment of red mercuric oxid or red precipitate has been used as a popular domestic remedy, and the tincture of larkspur or of stavesacre, to be mentioned again later, may be useful in many cases.

The louse which infests the genital regions, *Pediculus pubis*, is smaller and more difficult to remove mechanically.

A dilute solution of mercuric chlorid (corrosive sublimate) is sometimes used and is very effective for this troublesome parasite. It should not be stronger than one to five hundred (2 grains to 2 fluidounces or 0.1 gm. to 50 c.c.), and this should be used cautiously. A less cleanly but very efficient remedy is mercurial ointment.

A 20 per cent. tincture of staphisagria, or of larkspur, diluted with water, bay rum, dilute alcohol or soap liniment is much used in some parts of the country.

Among the names of staphisagria which indicate its common use are semen staphidis pedicularis and läusekörner.

In lieu of the unofficial tincture the now official:

FLUIDEXTRACTUM STAPHISAGRIÆ.—U. S.—Diluted with from 8 to 10 parts of soap liniment, or of bay rum, will be found equally serviceable.

It may not be amiss to call attention to the fact that carbolic ointment not only kills the troublesome chigger, but also relieves the smarting which that parasite occasions, or which is more frequently caused by scratching the place where the parasite is embedded.

ANTHELMINTICS.

The term anthelmintic, meaning literally against a worm, embraces vermifuges and teniafuges, which expel the round and tape worms, respectively, and vermicides and tenicides which kill them; but, as a matter of fact, the parasites are rarely killed before their expulsion.

Küchenmeister attempted to establish a rational basis for the use of anthelmintics, more than fifty years ago, but his work, which was widely quoted for a long time, has but little value at present.

v. Schroeder studied the effects of a large number of agents on ascarides and found that the latter are remarkably resistant to poison placed in the media with the parasites, which are to a certain extent able to resist absorption. These parasites are surrounded by a chitinous substance, and when that is not acted on by the agent the mouth is the principal means of ingress to their bodies. Santonin, even in concentrated solution, was found to be harmless to the parasite, which, however, found it objectionable and sought to escape from the solution containing it, the movements being particularly active; from this it would appear that santonin drives the round worm out of its normal habitat into the large intestine, from which it must be swept by purgation.

The statement that the presence of castor oil greatly increased the toxicity of santonin for this parasite arose from a mistake, and santonin is now usually given with calomel. Since it is not intended to be dissolved in the stomach, a compressed tablet or lozenge of calomel and santonin is to be preferred. For the same reason, when santonin is given to a child, with a little sugar, the two substances should be lightly rubbed together without being powdered. Sodium santoninate which is soluble, should not be used, therefore, and it has, very properly, been dismissed from the later editions of our Pharmacopeia.

The following are among the now official substances that are useful as vermifuges.

SANTONICA.—U. S.—Santonica or Levant worm seed, as it is frequently called, is officially described as the dried unexpanded flower heads of *Artemisia pauciflora*. It is now but seldom employed as such, being generally displaced by:

SANTONINUM.—U. S.—Santonin, the inner anhydride or lactone of santonic acid, obtained from santonica, was discovered in 1830, by two German apothecaries, quite independently of each other, Kahler in Düsseldorf, and Alms in Mecklenburg.

Average dose: 0.06 gm. (1 grain).

SPIGELIA.—U. S.—Spigelia or pink root is the dried rhizome and roots of *Spigelia marilandica*.

Average dose: 4 gm. (60 grains).

FLUIDEXTRACTUM SPIGELIÆ.—U. S.—This is made with diluted alcohol and is the preparation now generally used when this drug is to be administered.

Average dose: 4 c.c. (1 fluidrachm).

OLEUM CHENOPODII.—U. S.—Oil of chenopodium is a volatile oil distilled from *Chenopodium anthelminticum*, more popularly known as American wormseed.

Average dose: 0.2 c.c. (3 minims).

QUASSIA.—U. S.—The wood of *Picrasma excelsa*, Jamaica quassia, or of *Quassia amara*, Surinam quassia, is most frequently used in the form of a decoction or an infusion, made in accordance with the general formulas for these several preparations.

Average dose: 0.5 gm. (7½ grains).

EXTRACTUM QUASSIÆ.—U. S.—This is an aqueous extract and represents ten times the weight of the crude drug.

Average dose: 0.06 gm. (1 grain).

FLUIDEXTRACTUM QUASSIÆ.—U. S.—This is directed to be made with a mixture of three parts of alcohol and six parts of water.

Average dose: 0.05 c.c. (8 minims).

TINCTURÆ QUASSIÆ.—U. S.—This is a 20 per cent. tincture and is made with 35 per cent. alcohol.

Average dose 2 c.c. (30 minims).

The *Ascaris lumbricoides*, or round worm, is a very common parasite in the small intestine of children particularly. The most useful remedy for this parasite is santonin; this has been given in a variety of methods. Some authorities recommend from one-half to one grain (0.02 to 0.05 gm.) morning and evening during three days for a child and on the fourth day a purgative. This suggestion was evidently based on the supposition that the parasites were killed or injured and were then to be swept out, but since we know that this is not true, the method in vogue at the present time is to combine santonin with a slowly acting purgative, such as calomel in small doses. The purgative should follow the santonin in a few hours at the latest. It should be remembered at all times that santonin is not an absolutely safe remedy and that it is far better to try a small dose and to repeat it in a few days if not effective than to give the maximum dose in the beginning.

A lozenge containing half a grain (0.03 gm.) of santonin given morning and evening, to a child, for three days will usually be found effective. Twice this dose is used for an adult.

If it is desired to give santonin in powders, it may be prescribed somewhat as follows:

℞. Santoni (eryst.) ..... grs. iii 0|2
Sacchari ..... grs. xxx 2|
M. Et in chart. No. vi div.

Sig.: One powder night and morning, the last dose to be followed by a purgative.

The purgative may consist of calomel or syrup of senna, or, according to the more modern teaching, 1/6 grain (0.01 gm.) of calomel may be directed to be incorporated in each paper. The mixture should be dispensed in granular form and not finely powdered. Santonin taken in this way has very little taste.

While santonin is perhaps the most effective remedy we have for ascarides, the fluidextract of spigelia has been recommended and is said to act somewhat like santonin. It is recommended that a laxative be given before the spigelia and a purgative some hours later, or the combination of pink

root and senna, that was at one time quite common, may be preferred.

Spigelia, however, has also given rise to toxic symptoms in children.

Oil of chenopodium, or oil of American wormseed, has long enjoyed a certain reputation, particularly as a household remedy, for round worms. It has a very disagreeable odor and taste. It may be given combined with castor oil, or from one to three drops may be mixed with sugar for a child.

The thread worm or pin worm, *Oxyuris vermicularis*, infests the rectum and colon, and is often spoken of as the seat worm.

The common anthelmintics, such as santonin, together with purgatives, are usually effective in removing them, but they sometimes prove very troublesome and difficult to dislodge.

Injections of large amounts of watery infusions are often useful. Infusion of quassia enjoys an especial reputation, it lessens the mucous secretion and probably increases the movements of the parasites, which facilitates their removal when the bowel is emptied.

As suggested in connection with the official preparations of quassia, an aqueous infusion of the extract or even a correspondingly diluted fluidextract may be used, with some promise of satisfactory results, in cases in which the infusion can not be readily obtained.

Phenol has also been recommended, but the danger of absorption entirely precludes its common use.

Osler recommends the cold injection of a strong solution of common salt for children, repeated for ten days at least. The hips are elevated to favor the retention of the injection as long as possible.

TENIAFUGES.

Remedies used for tape worm are commonly spoken of as teniafuges, even though the parasite may belong to a different genus, but as a matter of fact, the *Tænia saginata*, which is derived from beef, is very much more commonly found in the human intestine, while *Tænia solium* from swine is met with much less frequently in man.

Bothriocephalus latus is mentioned in all text-books, but as it is extremely rare in this country, and practically never originates here, it may be disregarded in this place.

Male fern, or the much more widely used oleoresin, which fully represents the rhizome, is said to be very much less efficacious against the *Tænia* than against the *Bothriocephalus*, while pelletierin, obtained from the bark of pomegranate root, is especially efficacious against the *Tænia*. If this be true, we have but another example of our tendency to take everything originating in Germany as being universally correct, without exercising our own judgment, for male fern has certainly enjoyed a greater popularity than the circumstances appear to justify. On the other hand, its wide use in northern Germany is more rational, since the *Bothriocephalus* is very commonly found there in man.

v. Schroeder found that one part of pelletierin in ten thousand parts of a solution containing 1 per cent. each of sodium chlorid and sodium carbonate, was very rapidly fatal to *Tænia serrata* and to *Tænia inermis*, while much stronger solutions were practically harmless to round worms.

Estimating the content of the human intestine at 200 c.c. after purgation, if only 0.2 gm. (3 grains) of pelletierin escape absorption from the stomach and pass into the intestine, it would be present in the proportion of one part in one thousand of intestinal content, or ten times the concentration found necessary by von Schroeder.

Pelletierin is but mildly toxic to man, hence it appears to be an almost ideal teniafuge or tenicide.

Kamala, which was formerly official, and is still used, acts as an intestinal irritant, causing purging and therefore requires no subsequent purgative. It is said to be effective against tenia and is usually administered in substance, being given in doses of from 4 to 8 gms. (one to two drachms).

Kostoxin, obtained from kousso, resembles male fern in its pharmacologic action, but is said to be efficacious against *Tænia* as well as against *Bothriocephalus*.

Aspidium, or male fern, has repeatedly given rise to toxic symptoms and death has occasionally followed its use. It is apparently inferior to pomegranate in the treatment of tenia, and there seems to be little reason for giving it the preference.

Filicic acid was formerly regarded as the active principle, however, it seems that there are a number of principles which share the action.

Pepo or pumpkin seed enjoys some reputation as a teniafuge, but is not often prescribed alone. It has, at least, the advantage of not being toxic to the patient.

Some Official Substances Used as Teniafuges.

ASPIDIUM.—U. S.—Aspidium, or male fern, the dried rhizome of *Dryopteris Filix-mas* or of *Dryopteris marginalis*, was known to Dioscorides, and advocated by him as being an efficient remedy for tape worm, but fell into disuse and was subsequently nearly forgotten until revived as a secret remedy, for the same parasite, about the middle of the eighteenth century.

Average dose: 4 gm. (60 grains).

OLEORESINA ASPIDII.—U. S.—Oleoresin of aspidium is now directed to be made with acetone. This preparation was first suggested by Peschier of Geneva, about 1825, and has gradually displaced the other preparations of male fern.

Average dose: 2 gm. (30 grains).

GRANATUM.—U. S.—Pomegranate, the bark of the stem and root of *Punica Granatum*, was also known to the ancients as a remedy for tape worm. It appears to have been completely forgotten and was introduced into Europe from India during the first decade of the nineteenth centry.

Average dose: 2 gms. (30 grains).

FLUIDEXTRACTUM GRANATI.—U. S.—Fluidextract of pomegranate is made with a menstruum of diluted alcohol containing 10 per cent. of glycerin.

This is a new addition to the Pharmacopeia and has, as yet, not been widely used.

Average dose: 2 c.c. (30 minims).

PELLETIERINÆ TANNAS.—U. S.—Pelletierin tannate is officially described as a mixture, in varying proportions, of the tannates of four alkaloids (punicin, iso-punicin, methyl-punicin and pseudo-punicin) obtained from *Punica Granatum*.

Average dose: 0.25 gm. (4 grains).

CUSSO.—U. S.—Kousso, also known as kosso, koso and Brayera, consists of the dried panicles of the pistillate flowers of *Hagenia abyssinica*. It was discovered by Bruce, about 1768, but was not generally known as an anthelmintic until after Brayer, in 1822, published his observations on the use of the drug in Constantinople. Kousso is usually administered in the form of an unstrained infusion, the object being to secure mechanical irritation by the hairs which are found on the flowers, but they probably play only a minor part in the action of the drug.

Average dose: 16 gms. (240 grains).

PEPO.—U. S.—Pepo, or pumpkin seed, the ripe seed of *Cucurbita Pepo*, is usually administered in the form of the ground seed, deprived of the hull, or, as an emulsion, prepared by treating the ground seed with hot water.

Average dose: 30 gm. (1 ounce).

The tannate of pelletierin, being but slightly soluble, is preferred as a teniafuge, but it is somewhat expensive, and the decoction of the root bark is therefore frequently directed. It has been suggested that the alkaloid, being volatile, is driven off in the process of boiling, but the loss in this way has proved to be unimportant. The fresh bark is much more efficacious than that which has been kept for some time. It is stated that the deterioration is due to chemical change that takes place in the alkaloid.

As we have no means of knowing the quality of the bark which will be used in making the decoction, it is better to use the pelletierin tannate or to direct the preparation of an extract[1] made according to a formula devised by von

1. The ground bark is exhausted by heating with water on a water bath for an hour, the decoction is cooled, milk of lime is added in excess, the mixture filtered, water being added to the precipitate to wash out the alkaloid, the washings added to the filtrate, the filtrate neutralized with dilute sulphuric acid and again filtered. It may be taken in this form, after adding about a gram of tannin, or the neutralized filtrate may be evaporated on a water bath until nearly solid, and then extracted with 70 per cent. alcohol, this is then filtered and subsequently evaporated to a dry extract which is approximately equal to pelletierin.

Schroeder to enable one to get a fairly uniform product regardless of the quality of the bark used.

About one gram or less of the extract, together with one or two grams of tannin, constitute the ordinary dose for tape worm.

Pomegranate root bark contains a large amount of tannin, too much, in fact, considering the amount of bark required to yield the requisite amount of pelletierin, hence none has to be added to the decoction. So abundant is the tannin that it may cause vomiting and defeat the purpose for which the dose is given, hence the extract mentioned has a decided advantage over the decoction.

The following is the method of using pelletierin tannate, the extract described above, or the decoction. Beginning in the evening the patient takes a light meal, which should be exclusively of carbohydrates, and then a laxative; on the following morning, while fasting, he takes 0.4 to 0.5 gm. (6 to 8 grains) of pelletierin tannate, or a corresponding amount of the extract or decoction, followed in half an hour to two hours by a brisk purgative, such as castor oil or syrup of senna.

Of 33 cases treated in this way, the entire parasite, including the head, was removed in 29 cases. Failure in some cases is to be attributed to the head being securely protected by the folds of the mucous membrane.

It is somewhat significant that the many formulas which have acquired some reputation in the treatment of tape worm contain pomegranate bark. The following taken from Osler is almost identical with a formula which has been held as a proprietary by a southern firm for a great many years, among whose patrons it enjoys a considerable reputation:

R.	Granati	℥iv	15
	Pepo	℥i	30
	Ergotæ pulveris	ʒi	4
	Aquæ bull.	f℥x	300

An infusion is directed to be made [better a decoction], from which is formed an emulsion, by adding:

	Oleoresina aspidii	ʒi	4
	Olei tiglii	mii	12
	Acaciæ q. s.		

The oleoresin of aspidium may be given as an emulsion or in capsules, or it may be combined with other teniafuges, somewhat after the formula given above.

Pumpkin seeds are harmless and may be given either in substance or in the form of a decoction, using an ounce or more of the bruised seed.

Of the other, official, substances that have been used to assist in expelling tenia it will suffice to enumerate: ether, chloroform, rectified oil of turpentine, naphthalen and thymol. These are all comparatively active drugs and must, therefore, be used with caution.

ANTIGONORRHEICS.

The title antigonorrheics would appear to suggest that we have medicaments that have a specific action on gonorrhea, or the causative factor of that disease, instead of representing, as it really does, a somewhat meaningless array of substances that have been used more or less empirically as remedies for gonorrhea.

The name gonorrhea should properly be reserved for the acute, contagious, inflammation of mucous membranes caused by a specific organism, the gonococcus of Neisser. In an even more restricted sense it is now frequently applied to the specific inflammation caused by that micro-organism in the male urethra.

Prior to the discovery of the gonococcus, by Neisser, in 1879, there was probably no one common disease about which there existed such widely varying theories and opinions, and certain it is that no known disease has been so persistently and so widely maltreated.

From the time of the early Greeks and of the Romans the treatment of gonorrhea appears to have been relegated to the incompetent, the charlatan and the quack, and it may be safely asserted that no one disease, with the possible exception of syphilis, has been the direct, or the indirect, cause of more misery, more suffering and more untimely deaths because of this neglect and maltreatment.

Recognizing the seriousness of the disorder it would be futile to attempt to give suggestions for exhaustive treatment, and practically the only apology that we have to offer for introducing even a mention of the disease, and of some of the official remedies that may be of use in its treatment, is to be found in the fact that victims of this disorder are even now subjects for neglect and malpractice. Evident proof of this can be found in almost any one of the daily papers which regularly advertise specific cures for all forms and kinds of urethral discharges.

The heinousness of this practice, and the really far-reaching and serious consequences of the practice in its ultimate results have not as yet been properly appreciated even by such members of the medical profession as should be more thoroughly well informed. This is, in a measure, evidenced by the recently published statement, made by a prominent genito-urinary specialist, that he frequently uses and recommends a popularly advertised nostrum, the manufacturers of which deliberately mislead the layman into believing that he can be cured in 48 hours.

As suggested above, the treatment of gonorrhea is not by any means the simple procedure that might be wished for and even the differentiation of true gonorrhea from a non-specific inflammation is one that requires more than ordinary skill and experience, and should, wherever possible, be entrusted to a safe and conscientious specialist, who not alone has the interest of the patient in mind, but who will also attempt, so far as in him lies, to prevent the spread of the infection by impressing on the patient the advisability of observing certain necessary rules of cleanliness, decency and abstinence.

Using the name, gonorrhea, in its most restricted sense, as applying only to the specific urethritis in the male, we may consider this as a type, and recount some of the suggestions for treatment that have been made in connection with it.

This type of gonorrhea is said to be acute, subacute or chronic, according to the stage of the inflammatory process, and it may involve the anterior urethra alone or include, by continuity, the posterior urethra.

The generally accepted routine of treatment is to use only a mild astringent and antiseptic local application for the first or acute stage, to supplement this with the internal use of diuretics, of a terebinthinate or resinous nature, in the subacute or secondary stage, and to use more active astringents and antiseptics as local applications in the chronic stage of the disease.

It will be noted by this that what is usually referred to as an antigonorrheic is in reality but a diuretic, an antiseptic or an astringent.

Of the several official drugs and preparations that have been found to be more particularly useful, in these several stages of the disease we may enumerate:

POTASSII PERMANGANAS.—U. S.—This is recommended to be used, as an irrigation, in very dilute solutions (1-2,000 to 1-6,000).

ARGENTI NITRAS.—U. S.—This was formerly quite popular, in very dilute solutions, but has fallen into disuse and is now frequently substituted by one or the other of the non-official so-called organic silver salts. These latter preparations, while unduly numerous, are usually expensive and the more active of them are inexpressibly filthy.

A satisfactory and apparently efficient substitute for the several silver preparations has been found in silver iodid. Drs. Siter and Uhle[2] have reported a series of cases in which this preparation was used, in the form of an emulsion of the freshly prepared silver iodid, with excellent results.

A preparation such as was used by Drs. Siter and Uhle may be prepared by any pharmacist, as follows:

	Argenti nitratis		
	Potassii iodidi, āā	gr. xxxiii	2
	Mucilago chondri N. F.	f.ʒvi	25
	Aquæ dest q. s. ad	f.ʒiii	100

M. Sig.: Use as an injection.

The best method of preparing a finely divided precipitate is to dissolve the potassium iodid in all of the water and add the

2. University of Pennsylvania Med. Bull., May, 1905.

crystals of silver nitrate gradually, shaking well after each addition; when the silver nitrate is dissolved, add the mucilage and shake thoroughly once more.

The resulting mixture will represent approximately 3 per cent. of silver iodid. This strength may be increased or decreased as desired. If prepared in this way, the weaker mixtures will require a correspondingly smaller amount of mucilage to hold the powder in suspension and mixtures below 1 per cent. may be dispensed without the addition of any foreign material.

Of the drugs that are frequently used for internal administration in the second or sub-acute stage of the disease the Pharmacopeia includes, in the order of their present popularity:

OLEUM SANTALI.—U. S.—Oil of santal, or oil of sandalwood, is a volatile oil distilled from the wood of *Santalum album*. The Pharmacopeia directs that this oil contain not less than 90 per cent. of santalol. This requirement is readily met by the better grades of oil of santal now on the market, so that there is little or no need to resort to proprietary specialties containing, or purporting to contain, true oil of santal.

Average dose: 0.5 c.c. (8 minims).

COPAIBA.—U. S.—Copaiba, balsam of copaiba, as it is more popularly called, is derived from one or more South American species of copaiba. It was introduced into Europe by the Portuguese, during the latter half of the seventeenth century, and has long enjoyed the reputation of being of especial use in connection with specific urethritis in the male.

Average dose.—1 c.c. (15 minims).

OLEUM COPAIBÆ.—U. S.—Oil of copaiba is officially described as a volatile oil distilled from copaiba.

Average dose: 0.5 c.c. (8 minims).

OLEORESINÆ CUBEBÆ.—U. S.—Oleoresin or cubeb represents the alcohol soluble portion of the dried, unripe, fruit of *Piper Cubeba*.

Average dose: 0.5 c.c. (7½ grains).

OLEUM CUBEBÆ.—U. S.—Oil of cubeb is a volatile oil distilled from cubeb.

Average dose: 0.5 c.c. (8 minims).

Of the more active astringents that are used in the third, or chronic stage of gonorrhea, in the male, and form such a prominent part in the treatment of the more common form of gonorrhea in the female, we may enumerate:

ZINCI SULPHAS.—U. S.—Zinc sulphate.

ZINCI ACETAS.—U. S.—Zinc acetate.

ZINCI CHLORIDUM.—U. S.—Zinc chlorid.

ZINCI PHENOLSULPHONAS.—U. S.—Zinc phenolsulphonate.

ALUMEN.—U. S.—Alum.

ACIDUM TANNICUM.—U. S.—Tannic acid.

ARGENTI NITRAS.—U. S.— Silver nitrate.

These several astringents, with or without the addition of well-known antiseptics, such as boric acid, phenol, thymol, glycerin, and the several combinations or preparations of them, practically constitute all that is necessary in the treatment of the most persistent of the chronic forms of gonorrhea.

Clinical Note

ACETANILID POISONING FROM BROMO-SELTZER.*

ALBERT ENGLES BLACKBURN, M.D.

PHILADELPHIA.

Patient.—I was asked by his mother to see the patient, a man, aged 22 years, recently married. The patient did not consider himself sick and did not desire medical attention. It was with great difficulty that I obtained a distinct and correct history. I do not believe there was the intent to deceive, but his marked hebetude and obtuseness made it especially difficult to obtain a connected history. When the facts were finally obtained from his wife and he was asked as to their correctness, he acknowledged their truthfulness and promised to desist taking the drug.

History.—Following an acute illness some six months previous he began taking an occasional dose of bromo-seltzer for headache. The relief desired was temporarily obtained, and as the headaches recurred the bromo-seltzer was taken in larger amounts and at shorter periods. The quantity consumed grew larger and larger until the six weeks previous to my seeing him his wife assured me he consumed as much as $4.50 per week, which is approximately ten or twelve bottles. The patient would sit for hours if undisturbed, complained of being tired, and was unable to perform muscular effort, there was dyspnea on exertion. He was given to attacks of despondency and again to outbursts of passion, in which he threatened violence, but soon collapsed.

Physical Examination.—His appearance was appalling; his face was ashy white, the lips and lobes of the ears blue, the fingers were deeply cyanosed up to the second joint. His mucous membranes were very pale; the pupils reacted to light and distance. His expression was vacant, seldom speaking until spoken to. The tongue was heavily coated with a white fur, red at tip and margins; breath the foulest I ever noticed. Bowels constipated; the pulse varied from 85 when at rest to 130 on the slightest exertion, regular, fair volume, low tension. The left ventricle was enlarged downward and to the left. The first sound of the heart was very weak; a soft systolic mitral murmur was present The surface was cold and lifeless. Urine contained indican, but no albumin or casts. General tremulousness and loss of motor powers were marked. No blood examination was made.

To find the constituents of bromo-seltzer I wrote the Emerson Drug Company of Baltimore. Inasmuch as *Collier's Weekly* had lately given them a writeup, a member of the firm called. He told me that bromo-seltzer contained to the 100 grains (a heaping teaspoonful):

Acetanilid	gr. ivss
Potassium bromid	gr. x
Caffein	gr. ii
Soda bicarb.	
Citric acid.	

THE JOURNAL A. M. A., Feb. 10, 1906, states its analysis to be, to the 100 parts:

Potassium bromid	10.53 parts
Acetanilid	4.58 parts
Caffein	1.20 parts

Assuming an average dose to be a teaspoonful—not heaping as above stated—to weigh 76 grains, the dose would contain:

Potassium bromid	7 grains
Acetanilid	3 grains
Caffein	8 grains

Since many people take a tablespoonful repeatedly, the quantity of acetanilid varies between 12 and 15 grains, an amount which is exceedingly dangerous. For "business reasons" the representative requested that I refrain from quoting him.

Course.—Herrick states in his paper that great difficulty is experienced in withdrawing the drug. This was not the case in this patient. He was plainly told the cause of his trouble, and the effect if he continued taking it. He was carefully watched, but made no effort to secure the drug. At no time did he express a desire for it, which was probably due to the relatively short time of taking it. His improvement was steady, but slow. The cyanosis disappeared in about a week; the anemia was the last to disappear.

The treatment consisted merely of withdrawing the drug, administering the cardiac stimulants, strychnia and digitalis, and regulating the bowels.

Dr. Quigley reports in THE JOURNAL A. M. A., Vol. XLVI, No. 6, a case that went into collapse from a tablespoonful of bromo-seltzer, and states he would have died had not his stomach been emptied and stimulants administered.

* Reported before the West Philadelphia Branch of the County Medical Society, March 16, 1906.

First Total Gastrectomy in South America.—The *Semana Medica* for April 19 relates the successful removal of a cancerous stomach by B. Vasallo of Rosario, Argentina. The patient was a woman of 39 and was apparently in perfect health at date of writing, four months after the operation, with no digestive disturbances.

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MODERN IDEAS CONCERNING PUERPERAL ECLAMPSIA.

The profound anatomic changes that occur in the kidneys and liver, and to a less extent in the other parenchymatous organs, in eclampsia, leave no room for doubt that in this condition the blood of the patient is loaded with materials possessed of a high degree of toxicity. Both the origin and the nature of these poisons remain, however, among the most baffling of medical mysteries. The frequent association with marked albuminuria and the occurrence of convulsions quite similar to those of uremia led Frerichs and others to consider eclampsia as identical with uremia, and a specific disease only in that it occurs in pregnancy. That this is not the case, however, has been abundantly proved. In the first place the anatomic changes are quite different from those in uremia, in which the toxic materials seem to exert their influence chiefly on the central nervous system. In many cases of eclampsia the kidneys have been found to be entirely or almost free from structural changes, while in nearly all the liver shows severe alterations, which not infrequently are so great that it is quite impossible to draw a sharp line between eclampsia and acute yellow atrophy. Also, according to Zweifel, eclamptic blood contains no more urea and ammonium compounds than does normal blood, which is contrary to the condition in uremia.

By far the most characteristic and striking feature of eclampsia is the rapid improvement that usually follows the emptying of the uterus, particularly when this is done in the early stages of the attack. The albuminous urine clears up rapidly, the amount of urea increases until for a few days it may be much more than normal, and the constitutional manifestations subside correspondingly. This, of course, indicates that the source of the intoxicating substances is in the products of conception, rather than in a disturbed metabolism of the mother, which has been frequently assumed in analogy with acute yellow atrophy. A natural hypothesis is that the additional amounts of metabolic products thrown into the maternal blood, both from her own overactive organs and from the fetal tissues, cause injury to the liver and kidneys, as a result of which there is a deficiency in renal elimination, coupled with a loss of the normal detoxicating function of the liver and abnormal nitrogenous metabolism resulting from the injury to the same organ. The accumulation of toxic products from these two sources leads to further renal and hepatic injury, and thus a vicious circle is established. This plausible idea, however, does not fit so well with the fact of the prompt subsidence of the disease after removal of the contents of the uterus, as does the hypothesis that the fetus or placenta, or both, furnish most or all of the toxic substances. On this basis, numerous observers have sought for a toxic substance in these places, with varying results. The German journals of late have contained numerous reports of the work of Zweifel and his associates, which are based on the observation by Zweifel of small quantities of lactic acid in the blood and urine of eclamptic women. More recently the same author reports[1] observations on the occurrence of lactic acid in the fetus, obtaining it in much larger quantities from the blood escaping from the umbilical cord of children delivered from eclamptic women than in the blood of the mothers. This observation he interprets as indicating that the lactic acid is formed in the fetus rather than in the mother, and he looks on eclampsia as an acid intoxication of fetal origin.

Many objections, however, can be raised against this view, which has perhaps received too ready acceptance because of the recent development of interest in the subject of acid intoxication. In the first place, the symptomatology of eclampsia is by no means identical with that of poisoning with organic acids, as illustrated by diabetic coma. Secondly, the amounts of organic acids found in the urine in eclampsia are, as a rule, very small and not sufficient to account for the severity of the manifestations of puerperal eclampsia; thus in a typical case examined by Zweifel there was isolated but 0.4155 gram of the zinc salt of paralactic (sarcolactic) acid in nearly a liter of urine, which is a mere trifle as compared with the amounts of organic acids frequently found in diabetic coma. To be sure it is claimed that the sarcolactic acid is more toxic than the diacetic and oxybutyric acids of ordinary acid intoxications, but there is no sufficient reason for believing that the minute amounts so far detected in eclampsia are capable of causing such severe anatomic changes and so violent an intoxication as are present in eclampsia.[2] Furthermore, much can be said against the view that the origin of the toxic substance, whether it is sarcolactic acid or some other more complex body, is in the fetus. This has been particularly urged by Liepmann,[3] who calls attention to the fact that the children, particularly when delivered early in the attacks before asphyxia has become profound, show no evidences of having been subjected to the action of any severe toxic substance, such as are manifest in the organs of the mother. If the toxic materials were produced in the fetus it might be expected that its tissues would suffer more change than those of the mother. Even more convincing against the fetal origin of the poison is the frequent development of

1. Munch. med. Wochft., 1906, vol. liii, p. 297.
2. Wolf: New York Med. Jour., 1906, vol. lxxxiii, p. 813.
3. Münch. med. Wochft., 1905, vol. lii, pp. 687 and 2484.

eclampsia after delivery of the child, and particularly the case of Hitschmann[4] of a patient who became eclamptic when pregnant in the fifth month with a hydatid mole, and no fetus at all. For these and other reasons Liepmann contends that the source of the toxin must be in the placenta.

It may be recalled that Weichardt, Ascoli, and many others have done considerable work based on the idea that the placental tissues, being foreign to the body, were toxic to the maternal organism, which, therefore, developed antitoxic substances to neutralize the placental elements that might enter the maternal circulation. Failure to develop such antitoxic substances (or possibly their overdevelopment, according to various ideas) was thought to be responsible for the eclampsia. It can only be said that this work on the "syncytiolysins" has led to little but confusion and interesting hypotheses, while some of the most recent observers question all the positive results obtained by their predecessors.[5] This phase of the subject of eclampsia must be held *sub judice*. Liepmann, impressed by the importance of the placenta in eclampsia, has examined a great number and finds that they are highly toxic for rabbits, whereas normal placentas are not; the poisonous substance seems to be closely related to the proteids of the placenta, to be extremely labile and as yet impossible of isolation. This work, of course, needs much more elaboration and confirmation.

The contention of many clinicians and pathologists, particularly Stroganoff,[6] that eclampsia is an infectious and semi-contagious disease seems not to have been sustained. It is hard to tell, on the evidence yet submitted, how much weight is to be attached to the view of Lange[7] that in at least some of the cases eclampsia is due to an insufficiency of the thyroid, whereby its detoxicating effect is lost. One other unproved theory may be mentioned, that of Dienst,[8] who believes that eclampsia is due to an abnormal communication between the fetal and maternal circulations whereby the heterogeneous fetal and maternal bloods become mixed.

Of particular practical importance, however, is the fact to be noticed in the reports of the supporters of these various hypotheses that all agree in urging as essential for the treatment of eclampsia the most prompt and early emptying of the uterus possible as against the expectant treatment advocated by the earlier supporters of the autointoxication theories of Bouchard and others. Some clinics claim a death rate of but from 1.8 to 5 per cent. in this disease as a result of early interference.

4. Centrbl. f. Gynäk., 1904, vol. xxviii, No. 37.
5. Wormser, Münch. med. Wochft., vol. li, pp. 7 and 2285.
6. Zeit. klin. Med., 1900, vol. xxxix, p. 503.
7. Zeit. f. Geb. u. Gyn., 1899, vol. xl, p. 34.
8. Centrbl. f. Gynäk., 1905, vol. xxix, No. 12.

GONORRHEAL VAGINITIS.

Gonorrheal vaginitis in children is always of special interest to physicians associated with hospitals. The difficulty often of making a diagnosis and of ascertaining the means of transmission on account of the almost endless number of possibilities make any new contributions on this subject of great value. There are not many endemics of gonorrheal vaginitis among children cited in the literature. This is probably due in part to the fact that when cases occur in a hospital physicians hesitate to report them on account of fear of bringing criticism on the institution. This is unfortunate, as by the study and publication of such instances light may be shed on the causes and means of transmission of this disease and new means discovered of prevention of further cases. The value of such information is seen in a recent article by Harmsen,[1] who furnishes several valuable suggestions on the diagnosis and prognosis of gonorrheal vaginitis.

One of the most important of his observations is that, contrary to the general belief, in many cases of gonorrheal vaginitis in children, during the first stage, the gonococcus is not present in the secretions. Very often simply a purulent catarrh, with scarcely any clinical symptoms, is the beginning of the specific disease, and only by later examination of the secretion is one successful in finding the gonococcus. Harmsen points out that, while the normal vaginal secretion contains a large number of flattened epithelial cells and a more or less great variety of bacteria, he generally observed at the onset of gonorrhea a purulent discharge, which did not contain these organisms, nor did it contain the gonococcus. In this discharge the epithelial cells were replaced by numerous leucocytes. As a rule in a few days the gonococci appeared. With the abatement of the infection the leucocytes and gonococci are replaced by epithelial cells and the micro-organisms normally present, so that if the vaginal secretion of a child contains exclusively leucocytes without the usual bacterial flora and epithelial cells one must be suspicious of the beginning (or end) of a specific vaginitis.

Fränkel and others have called attention to the absence of various micro-organisms and epithelial cells in gonorrhea, in which the gonococcus and leucocytes are present, but Harmsen appears to be the first to lay stress on the absence of the gonococcus in the first stage of specific vaginitis as a significant indication. These observations on the secretions would seem to be of value, in that it may be possible to make an earlier diagnosis than previously and so greatly to diminish the danger of the infection.

Harmsen considers it essential to make a microscopic examination of the vaginal secretions of all children admitted to hospitals in order to make a diagnosis of gonorrheal vaginitis as soon as possible. In this way treatment may be begun sooner and the danger of the dissemination of the disease greatly lessened. He believes that this microscopic examination should be carried out for a week or more on account of the length of the incubation period. This, we believe, is already the

1. Zeits. f. Hyg. u. Infektionskr., 1906, vol. liii, p. 89.

rule in some of our American hospitals in which the officials have had experience with endemics of this disease.

By examining the vaginal secretions, one may also be able to determine, not absolutely but with some probability, when a case is cured, by the absence of the gonococci and the reappearance of the epithelial cells and the various kinds of micro-organisms.

CANCER.

In the Oration on Surgery, Dr. J. B. Bryant discusses the nature of cancer and the progress made in its treatment in recent years. Notwithstanding all that has been, and is being done, the vast amount of theorizing and the frequent announcement of alleged discoveries, the true nature of malignant disease is still, he states, an elusive mystery. The more we study the subject and the more we learn of its extent and importance the more apparent to us is our own ignorance of the essential facts of its real nature and origin. Cancer is almost universal through the higher orders of the animal kingdom, and even in the vegetable world apparently analogous conditions exist. We have evidence that cancer was known at a very early period, and that the ancient Greeks had a very good clinical idea of its nature.

Bryant states that this disease is pre-eminently, though not exclusively, one of devolution and that, while it is apparently increasing in frequency in civilized communities, this may be due in part to the greater number of those who, through the increase of human longevity due to medical and sanitary advances, fall within the age limit of cancer attack. He points out that the slow and continuous increase in cancer mortality must be controlled by influences of such subtle kind as thus far to perplex the most astute observers, and makes an interesting study of the statistics of the location of cancer in the body. One of the most striking facts against the parasitic theory brought out is the vast difference between the sexes in the incidence of cancer in the gastro-intestinal tract. He shows that cancer of the male alimentary canal is seven times more frequent than in the same location in the female, and calls attention to the fact that there is no physiologic or anatomic difference in the two sexes which would account for such a parasitic selection as this—a parasitic theory being allowed. The fact also that the alimentary tract is affected in 80 per cent. of the cancers in males and that in females the same percentage occurs in the reproductive organs, including the breast, is strongly suggestive of a general condition of non-resistance to pathologic processes induced by traumatism in the aging organism.

In discussing the surgical treatment of cancer he states that the danger of delay is at the same time encouraging and discouraging, according to the aspect in which we view it. The vast amount of human misery that unquestionably has been relieved by surgery and its hitherto unparalleled success of late years are in the highest degree encouraging. On the other hand, the fact that it is almost impossible to insure early diagnosis and recourse to treatment, both on account of the insidious character of the approach and the inaccessible location of the disease in so many cases, seriously detracts from any satisfaction we may derive from the limited successes so far attained.

The subject of malignant disease is one of the most suggestive in medical science. There is a wide field here for studies in comparative, as well as in human pathology and even in the collateral sciences of anthropology, ethnology and archeology. There is ample room for all the work that can be done in all the special and general centers of research on the subject, and the fact that our progress has thus far been slow in elucidating the mystery should only be a stimulant to further effort.

THE PRESIDENT'S ADDRESS.

In his presidential address, published in this issue of THE JOURNAL, Dr. Mayo goes directly to the point, without any rhetorical flourishes, and shows that, with all our better organization and reconciliation of differences, for which we are to be duly congratulated, we are as yet only at the beginning of what is to be done, not only for ourselves, but also in the fulfillment of our duty to mankind. The public is a quarter of a century behind advanced medical thought in matters which it ought to know, and it is one of the misfortunes of a free government that ignorance sometimes sits in high places where, together with selfish interest, it can obstruct or nullify the measures needed for the welfare of the people. The public does not sin wilfully in this matter, but it needs education, and to furnish this the medical profession, which alone can guide this education correctly, will have to give not only the required individual effort, but more trained team work, to use a popular expression of the day. We have failed, as Dr. Mayo says, to secure the public's support for needed sanitary reforms because heretofore we have appealed to them too much as one individual to another, without the appeal carrying with it the weight of an authoritative organization. That a necessary piece of legislation demanded by the public, like the pure-food bill, can be so long blocked by the efforts of skilled lobbyists in the interest of adulterators is in itself sufficient evidence of the need of a united medical profession knowing its strength and how to use it intelligently. Dr. Mayo's statements in regard to medical education are in accord with the traditions and policy of the Association from its beginnings, and there are few who will not agree with him in what he says in regard to state licensure and reciprocity. His remarks also on the attempted and too often accomplished exploitation of our profession by public corporations, insurance companies and hospital authorities are all timely and true. Still more so are those on the evil of the acceptance of the money standard of success which is one of the most demoralizing tendencies of our social organization and is absolutely incompatible with the true professional spirit and ethical standard of the honorable

medical practitioner. This spirit, involving, as it does, a life of devotion to study and to the interests of others as well as of ourselves, can best be fostered and accentuated by harmonious co-operation among the members of an united profession.

THE BOSTON SESSION.

For the reason that our last forms are closed on Wednesday morning, it is impossible to give a complete report of the Boston session. Consequently, we shall not attempt to do so, believing that it will be preferable to publish the proceedings in full next week. We are advised by telegraph that the registration when the office closed Tuesday night was approximately 3,600. This far exceeds that of any preceding sessions. The total registration at Atlantic City in 1904 was 2,890. Judging from previous years' experience, therefore, we may estimate that the total registration for this meeting will be about 4,500. The immense number in attendance, however, is being cared for in a satisfactory manner.

Medical News

CONNECTICUT.

Personal.—Dr. David H. Monahan, Bridgeport, has been appointed almshouse physician, vice Dr. Henry Walls, resigned.

State Society Meeting.—The Connecticut State Medical Society held its one hundred and fourteenth annual meeting in New Haven, May 23 and 24, under the presidency of Dr. Nathaniel E. Wordin, Bridgeport. The presidential address was on the subject of "Influence of the Medical Profession on the State." Dr. Wordin warned the physicians of their duty toward humanity and the general cause of health and the necessity of unselfishness in that duty. He denounced the attempt of the legislature to abolish the law compelling vaccination, and spoke at length on the work accomplished by the society in influencing the different state governments in the campaign against insanitary conditions and the consequent spread of disease. The following officers were elected: President, Dr. William L. Higgins, South Coventry; vice-presidents, Drs. Charles E. Brayton, Stonington, and Dr. Samuel D. Gilbert, New Haven; secretary, Dr. Walter R. Steiner, Hartford, and treasurer, Dr. Joseph H. Townsend, New Haven.

ILLINOIS.

Physician Pays Fine.—Dr. Charles A. Nichols, Urbana, who was recently convicted of sending unmailable matter through the mails, on May 29 paid his fine and costs, which amounted altogether to $700.

Honor Old Practitioner.—Thirty members of the Champaign County Medical Society and many citizens of Rantoul gave a banquet in honor of Dr. James C. Harmon, one of the oldest practitioners in the county, May 21. Dr. James M. Bartholow, Urbana, presided as toastmaster, and tributes were paid to Dr. Harmon by a number of his old friends.

Decrease in Coroner's Cases.—The monthly report of the coroner of Cook County for May shows a total of 333 deaths as compared with 356 for April. Of these 11 were homicides; 32 were due to suicide; falls and railway accidents each caused 29 deaths, and 112 deaths were assigned to natural causes. Of the suicides 23 were male and 9 female.

Webster Judgment Set Aside.—The judgment recently rendered against Dr. George W. Webster, president of the State Board of Health, in a suit for alleged malpractice, was set aside May 26 by Judge Wright on the ground that the plaintiff failed to show any connection between the alleged want of skill and care, and the outcome in the case, which was the loss of the girl's leg. The case will probably be heard again by Judge Wright during the present term of court.

Communicable Diseases.—Canton has at present an epidemic of chickenpox, with about 200 cases.——Roscoe, Winnebago County, reports 26 cases of smallpox, and Cambridge, McHenry County, 8 cases; in Waukegan 4 cases of smallpox in dowieite families have been reported.——An epidemic of smallpox is reported from Lincoln. The city council has voted money to build an isolation hospital and quarantine will be strictly observed.——Decatur reports 4 cases of smallpox.——Four new cases of diphtheria have been reported from Pontiac.

Personal.—Dr. Ernest J. Miller, Sycamore, who has been seriously ill, is improving.——Dr. George A. Wash, Palmyra, who was operated on in St. Louis recently, has returned home convalescent.——Dr. and Mrs. Amos F. Conard, Homer, are taking a trip to California.——Dr. James R. Hull, Good Hope, has started for Seattle, en route for Japan.——Drs. Byron C. Stolp, Swartout and Conley have been appointed members of the board of health of Wilmette.——Dr. Daniel L. Jewett, Watseka, is seriously ill with pneumonia.——Dr. J. Millard Maury has been appointed city physician of Wheaton.——At the last meeting of the Court of Honor, Dr. James E. White, Urbana, was elected supreme medical examiner. This necessitates Dr. White's change of residence from Champaign to Springfield. Dr. James S. Mason, Rantoul, succeeds Dr. White in Urbana.

How to Save the Babies.—The Illinois State Board of Health has issued a new pamphlet written on the same general lines as that issued last summer, but containing more information and with more illustrations. Suggestions are given for the nursing mother; artificial feeding is fully discussed, and the advantages and disadvantages of the various infant foods are carefully considered. Cows' milk, properly modified, is advocated as the ideal food for infants, and the proper methods of modification are plainly described. The mother is taught not only how to feed the baby, but how it should be bathed, how it should be dressed in hot weather and how it should be cared for indoors and out. A chapter is also added which is devoted to suggestions to bottle men and milk dealers. This pamphlet is issued for gratuitous distribution, and those who wish copies should apply to the secretary of the State Board of Health, Springfield.

Investigation of State Institutions.—On account of the recent scandals at the Illinois Eastern Hospital for the Insane, Hospital, and the Illinois Hospital for the Incurable Insane, Bartonville, the State Board of Charities has made a preliminary examination, the salient points of which are as follows: The unfortunate condition of the patient, Katie Ward, in the former institution, occurred in consequence of conditions which have prevailed in the institution for many years. It has been the custom for employés outside of the medical staff to carry keys which would unlock the doors of the women's wards and dormitories. There were not enough nurses on duty at night to safeguard the women patients. The board calls attention to the defects of administration and lack of sufficient medical and nursing help which renders possible such unfortunate occurrences, and does not believe that blame should be fastened on individuals who are in a sense helpless agents in the care of these unfortunate people, but that a change should be made in the methods of administration of the institution.

Chicago.

Select President from Chicago.—At the annual meeting of the American Academy of Medicine in Boston, June 2-4, Dr. Casey A. Wood was elected president.

Appropriation to Fight Fever.—The council finance committee has granted an emergency appropriation of $10,000 for the purpose of combating the epidemic of scarlet fever.

Hospital Enlargement.—The directors of the Chicago Baptist Hospital contemplate the erection of administration offices and an addition to their present building at a cost of about $10,000.

Deaths of the Week.—The total deaths from all causes for the week ended June 2 were 465, equivalent to an annual death rate of 11.83 per 1,000. This is a reduction of 115 deaths from the preceding week and 2 fewer deaths than was reported in the corresponding week of 1905.

Personal.—Dr. Anders Doe has gone to Norway to represent the Norwegians of Chicago at the coronation of the king.——Dr. Groesbeck Walsh will return from Panama to assume the duties of senior physician at the Cook County Infirmary, Dunning.——Dr. John L. Porter sailed for Europe June 7.

Society of Social Hygiene.—A number of physicians, business men and clergymen met May 28 and organized a Chicago Society of Social Hygiene, with the object of combating in a systematic way the social evils of Chicago. Dr. William T. Belfield was made temporary president, and Mr. William Hallam, temporary secretary. It is proposed to carry on an active propaganda by lectures and other means.

Health Report.—The report of the health of Chicago for the week ended May 26 shows 580 deaths, equivalent to an annual mortality rate of 14.6 per 1,000, or a reduction of more than 11 per cent. as compared with the preceding week, but an increase of 24 per cent. over the corresponding week of 1905. Compared with the preceding week there were 45 fewer deaths among young children and 15 fewer deaths among individuals over 60.

Mortality of May.—During May 2,561 deaths were reported, equivalent to an annual death rate of 14.71 per 1,000. In May, 1905, 2,180 deaths occurred, equivalent to an annual mortality of 12.89, and in April, 1906, 2,770 deaths, an annual mortality of 16.44. Pneumonia caused 472 deaths during the month; consumption, 295; violence (including suicide), 198; nephritis, 186; heart diseases, 160; acute intestinal diseases, 123; and cancer, 121.

INDIANA.

Scarlet Fever.—Three new cases of scarlet fever developed in Rockville last week, and in consequence the lower grades of the public schoools have been closed.

Would Bribe Examining Board.—It is reported that a woman applicant for license to practice medicine in Indiana offered $5,000 to Dr. W. Mott, secretary of the State Board of Medical Examination and Registration, as an incentive to a favorable consideration of her papers.

Insanitary Schoolhouses.—Dr. J. N. Hurty, secretary of the State Board of Health, is making investigation of the schoolhouses of Northern Indiana with reference to their healthfulness. Thus far the State Board of Health has condemned four schoolhouses in Wabash County.

College Incorporated.—Articles of incorporation were filed with the secretary of state, May 23, for the State College of Physicians and Surgeons, Indianapolis, in connection with the Indiana University. The articles mention no capital stock, the college not being organized for pecuniary benefit.

Personal.—Dr. Miles F. Porter, Fort Wayne, has been appointed surgeon for the Pennsylvania System, vice Dr. Christian B. Stemen, resigned.——Drs. Dawson D. Van Osdel, John G. Lewis and Henry G. Linn have been appointed members of the health board of Rushville.——Dr. Overton H. Mennet, Columbus, has been appointed receiver of the Janney Manufacturing Company.——Dr. Maynard A. Austin, Anderson, has been appointed professor of principles of surgery in the medical department of Indiana University, Indianapolis.——Dr. Logan Stanley, assistant surgeon at the Indiana State Soldiers' Home, Lafayette, has resigned.

State Society Meeting.—The annual meeting of the Indiana State Medical Society was held at Winona Lake, May 23, 24 and 25, under the presidency of Dr. George H. Grant, Richmond. The association was welcomed to Winona Lake by Rev. S. C. Dickey and proceeded at once to take up the scientific work. The total membership was reported to be 2,227. Dr. Francis S. Watson, Boston, a guest of honor of the society, delivered an address on "The Commercial Spirit in Medicine." The following officers were elected: President, Dr. George J. Cook, Indianapolis; vice-presidents, Drs. John B. Berteling, South Bend, and Charles Chittick, Frankfort; secretary, Dr. Frederick C. Heath, Indianapolis (re-elected); treasurer, Dr. Albert E. Bulson, Jr., Fort Wayne; and delegates to the American Medical Association, Drs. John B. Berteling, South Bend, and A. M. Hayden, Evansville.

IOWA.

Smallpox.—The prevalence of smallpox in Northboro and vicinity has caused the closure of the public schools in that place.

Diphtheria Epidemic.—Diphtheria in malignant form has appeared in Sully. Schools and churches have been ordered closed, and all public gatherings have been prohibited for the time being.

Iowa Medical Women.—The ninth annual convention of the State Society of Iowa Medical Women was held in Des Moines, May 15, under the presidency of Dr. Evaline Peo, Boone. The following officers were elected: President, Dr. Mamie A. Coveny, Clinton; vice-presidents, Drs. Jennie G. Ghrist, Ames, and Georgia Stewart, Des Moines; secretary, Dr. Kate S. Harpel, Boone, and treasurer, Dr. Evelyn Frisbee, Des Moines.

Personal.—Dr. Henry Wiedow, Worthington, has started East and will sail next week for Germany.——Dr. John Hamilton has been elected city physician of Cedar Rapids.——Dr. Francis H. Batty has been appointed health officer of West Liberty, vice Dr. Otis B. Wyant.——Dr. J. M. Gahringer, Oelwein, is seriously ill with rheumatic arthritis.——Dr. Frank S. Hough has been elected health officer of Sibley.——Dr. Edward L. Rohlf, Waterloo, has been appointed coroner of Blackhawk County, vice Dr. Thomas U. McManus, resigned.

Alumni Election.—The alumni of Drake University, Medical College, Des Moines, held a reunion May 16 and organized, with the following officers: Dr. Ernest R. Limbocker, New Virginia, president; Dr. C. N. Leir-Olsen, Des Moines, vice-president, and Dr. Lenna L. Meanes, Des Moines, secretary.——At the annual meeting of the Medical Alumni Association of the State University of Iowa, Iowa City, May 1 and 2, the following officers were elected: President, Dr. Charles J. Saunders, Fort Dodge; vice-presidents, Drs. Joseph H. Sams, Clarion, and John T. McClintock, Iowa City; secretary, Dr. Walter L. Bierring, Iowa City; treasurer, Dr. Mamie A. Coveny, Clinton; and executive committee, Drs. Edward E. Dorr, Des Moines, William A. Rohlf, Waverly, and Fred W. Powers, Waterloo. The session was made especially interesting by a number of clinics and demonstrations.

State Society Meeting.—The fifty-fifth annual meeting of the Iowa State Medical Society was held in Des Moines, May 16, 17 and 18, under the presidency of Dr. William Jepson, Sioux City. The address of welcome was delivered by Hon. C. S. Bradshaw, Des Moines, and was responded to by Dr. Frank E. Sampson, Creston. The following officers were elected: President, Dr. Elbert W. Clark, Grinnell; vice-presidents, Drs. Henry A. Liepziger, Burlington, and Michael J. Kenefick, Algona; delegates to the American Medical Association, Drs. William Jepson, Sioux City, and Edward E. Dorr, Des Moines. The committee on public health and legislation for the year is composed of Drs. E. Luther Stevens, Des Moines; Joseph M. Emmert, Atlantic; Fred W. Powers, Waterloo, and the president and secretary. The work of the tuberculosis society of the state was approved and $250 was appropriated to further the work. A contract for five years was made by the society with Dr. Edward E. Dorr, Des Moines, editor of the *Iowa Medical Journal*, for the publication of the proceedings of the association. The society also appropriated $300 toward the memorial to Dr. N. S. Davis.

KENTUCKY.

Warrants Issued for Physicians.—On May 19 warrants were issued for the arrest of eight Louisville physicians who had failed to take out the license required by the local authorities.

Graduation Exercises.—The annual commencement exercises of the Medical Department of the University of Louisville were held May 4, when a class of 48 was graduated. The class was presented by the dean, Dr. James M. Bodine, to the president of the board of trustees, T. L. Burnett, LL.D., who conferred the degrees. The faculty valedictory, a eulogy on the life of the late Dr. John A. Ouchterlony, was delivered by Dr. Henry A. Cottell.

Southwestern Physicians Meet.—The thirty-fifth annual meeting of the Southwestern Kentucky Medical Association was held in Paducah, May 8 and 9, under the presidency of Dr. Shandy Z. Holland, Grahamville. The following officers were elected: President, Dr. Edward B. Shelton, Blandville; vice-presidents, Drs. W. G. Kinsolving, Dulaney, and Ben. P. Earl, Charleston; secretary, Dr. Van A. Stilley, Benton, and treasurer, Dr. Charles H. Brothers, Paducah.

Personal.—Dr. William E. Truesdell has been appointed physician to the Campbell County jail, Newport, vice Dr. Virgil F. Barker.——Dr. William E. Irvin has been elected secretary of the Owensboro board of medical examiners for schools.——Dr. J. L. Phythian, Newport, president of the board of trustees of the Spears Memorial Hospital, Dayton, has resigned.——Dr. Adolph O. Pfingst has been appointed eye, ear, nose and throat specialist, and Dr. A. O. Brennan placed in charge of the male and female ward of the Louisville Hospital for July and August.——Dr. and Mrs. Maverell K. Allen, Louisville, sail for Europe on the *Moltke*, June 12.——Dr. James Weir, Owensboro, has been made a member of the American Geographical Society.

McCormack in Kentucky.—Dr. J. N. McCormack made a trip to Kentucky in May, delivering addresses before medical societies, urging the benefits of organization and defining the relation of the physician to the public. His lectures have been very generally attended by representative people and have been enthusiastically received both by the medical profession and the laity. In Lebanon the circuit court was in session, but adjourned for the purpose of attending Dr. McCormack's lecture. It is reported from Danville that the lecture might well be repeated in that place and would have an overflowing house. About 300 were present at the lecture in Harrodsburg, both laity and the profession. In Cynthiana the lecture was

well received and the lecturer was given a rising vote of thanks. At Newcastle a large audience was addressed at the court house. Dr. McCormack addressed the Southwestern Kentucky Medical Association at its meeting in Paducah.

LOUISIANA.

New Orleans Health Improving.—The mortality record for April was at the rate of 14.34 per 1,000 compared with 15.41 per 1,000 for April of last year. The March record was at the rate of 16.81 per 1,000 as compared with 19.08 for March of 1905. During April 45 cases of smallpox were reported, or three less than during the previous month. No deaths from this disease occurred in either month.

Report Cure of Leprosy.—In the report of the Board of Control of the Louisiana Leper Home, submitted to the governor, May 22, it is announced that a definite cure has been obtained in three cases of leprosy. The cases are reported by Dr. Ralph Hopkins, visiting physician, and Dr. Isadore Dyer, consulting leprologist. The patients have been discharged. The board requested the legislature to locate the point of infection and suggested that an appeal be made to the federal government to establish a national hospital for lepers.

Cuban Quarantine.—The State Board of Health, on April 28, took more stringent action relative to Cuba when it promulgated the following order:

By direction of the President, you will not permit any person to go aboard any vessel anchored in the harbor of Havana who is not immune. This rule will apply to both laborers and representatives of various transportation companies; you will require every person boarding the vessel to exhibit to you a certificate of immunity, which certificate must be satisfactory to you. In addition to the above, you will also take the temperature of all persons boarding the vessel. You understand that the only persons allowed aboard the vessels are one representative of the Southern Pacific Company, Illinois Central Railroad Company and the Express Company during any one trip, and the laborers actually employed in loading and unloading the vessel. This rule effective and in force on and after May 1, 1906.

State Medical Meeting.—The twenty-seventh annual meeting of the Louisiana State Medical Society was held in New Orleans, May 8, 9 and 10, under the presidency of Dr. Cleophas J. Ducote, Cottonport. Dr. C. Jefferson Miller, president of the Orleans Parish Medical Society, welcomed the society on behalf of that body. In his annual report, the president spoke of the increase in membership of the society, of the yellow-fever epidemic and the work done by the physicians of the state, the United States Public Health and Marine-Hospital Service, and of the general acceptance of the mosquito doctrine of the transmission of yellow fever. Dr. John L. Scales, Aldenbridge, was appointed councilor for the fourth district and Dr. Stuart L. White, Ruston, councilor of the fifth district, vice Dr. R. F. Harrell. Among the guests of the society were Dr. Warren S. Bickham, New York, Dr. James Carroll, U. S. Army, and Dr. William H. Sanders, Montgomery, state health officer of Alabama. On the first evening a symposium on the sanitary control of yellow fever was held. Dr. James Carroll, U. S. Army, presented the principal paper on "Yellow Fever in Louisiana." Dr. Hamilton P. Jones, New Orleans, spoke on "Isolation Hospitals"; Dr. H. Dixon Barnes narrated his experiences during the 1905 epidemic; Dr. Sidney L. Theard, New Orleans, presented a paper on "Requirements of Maritime and Inland Sanitation in the Light of the Mosquito Doctrine," and Dr. Luther Sexton, New Orleans, discussed some of the difficulties in the diagnosis on yellow fever. The matter of federal quarantine evoked active discussion. Dr. William H. Sanders, state health officer of Alabama, read a paper in which he showed the evil features of federal control, and Dr. Henry P. Garth discussed the relation of the state and national quarantine. He called attention to the action of other states in 1905 which virtually declared war against Louisiana and stated that he believed federal quarantine the only remedy for such conditions. Dr. Warren S. Bickham, New York City, a guest of the society, delivered an address on the "Operative Surgery of the Spine and Cord," illustrated by operations on the cadaver. Just before closing the society adopted a resolution pledging the medical profession of the state to a policy of publicity with respect to the existence of yellow fever whenever the disease is present. The election of officers resulted as follows: Dr. Henry D. Bruns, New Orleans, president; Drs. Charles McVea, East Baton Rouge, George F. Wilson, Bienville, and Allen J. Perkins, Lake Charles, vice-presidents; Dr. P. Leonce Thibaut, New Orleans, secretary; Dr. Jules Lazard, New Orleans, treasurer; Drs. Paul E. Archinard and Edwin J. Graner, both of New Orleans, and Dr. J. Wofford Sanders, New Iberia, councilors; and Drs. Francis M. Thornhill, Arcadia, and James C. Willis, Homer, members of the board of medical examiners. The banquet was one of the most successful events of the meeting. Dr. Marcus J. Magruder officiated as toastmaster; Dr. Edwin B. Craighead, president of Tulane University, was the principal speaker, and toasts were responded to by Drs. C. Jefferson Miller, H. Dickson Bruns and others.

MARYLAND.

Baltimore.

May Deaths.—During May there were 867 deaths and 629 births reported, also 143 cases of typhoid fever with 12 deaths.

Sewage Plant Plans.—It is claimed that the sewage plant of Baltimore will be the most perfect in the world. The estimated cost is $3,283,000, and the method will be that of septic tanks and sprinkling filters, with supplementary intermittent filtration through sand. About 1,200 acres of land will be needed.

Personal.—Dr. John C. Hemmeter has been elected an honorary member of the Imperial Society of Austrian Physicians at Vienna. He sailed for Europe June 6.——Dr. Archibald C. Harrison has been appointed surgeon of the Northern Central and the Philadelphia, Wilmington & Baltimore railroads, to succeed the late Dr. Thomas S. Latimer.

Failure to Report Cases.—Attention is being directed to the failure of physicians here to report cases of infectious diseases. Not over 40 per cent. of such cases in the city are reported. There is a difference of opinion between the city and state health authorities regarding the ability to enforce the law requiring reports, the former claiming that it can not be enforced. A physician living in the northern section—the area of the typhoid fever epidemic—has been arrested by the state board on the charge of failure to report cases of that disease. It is claimed that had he obeyed the law there would have been no epidemic.

Commencements.—The University of Maryland School of Medicine held its one hundredth commencement June 4, when a class of eighty-three was graduated. Dr. Robinette B. Hayes, of North Carolina, carried off the gold medal, the highest honor, with a mark of 97.64. Mr. Francis King Carey delivered the address.——The Woman's Medical College graduated a class of two, May 31.——The College of Physicians and Surgeons graduated a class of sixty-five, May 31, at the thirty-fourth annual commencement. Rev. Dr. Huckel, in his address, urged that a systematic study of the mind should be included in the medical curriculum of colleges.

University Alumni Meet.—The Alumni Association of the University of Maryland School of Medicine held its annual meeting and banquet June 1. Dr. Randolph Winslow delivered the address on "The School in 1871 and 1906," and announced that a dormitory would be built for the use of students on ground recently purchased. He spoke of a plan for the union of the Baltimore Medical College with the university. Dr. Howard E. Ames, medical director, United States Navy, presided, and about 350 sat down to table. Dr. Samuel C. Chew was elected president for the ensuing year. Dr. Summerfield B. Bond was toastmaster, and addresses were made by Drs. Shipley, Caspari, Hirsh, Hopkinson, Neale and Carroll. The class of 1881 held its twenty-fifth reunion the same evening, Dr. Charles W. Mitchell presiding.

MASSACHUSETTS.

Bequest.—By the will of the late Alfred Cross of Lynn $5,000 is devised to the Lynn Hospital.

Maternity Ward Opened.—The new maternity ward at the Lawrence General Hospital was formally opened May 19. The ward contains accommodations for 16 patients.

Founder of Floating Hospital Resigns.—Rufus B. Tobey, Boston, who founded the Boston Floating Hospital in 1895 and who has since served this institution without compensation, was obliged to sever all relations with the institution, his resignation taking effect June 1.

Summer Courses at Harvard.—Harvard University Medical School will continue its usual summer courses during the months of June, July, August and September. A total of 71 courses is announced and the students in the medical school will be allowed all the privileges of the summer school of arts and sciences.

District Society Meeting.—The Middlesex East District Medical Society held its annual meeting in Stoneham, May 9, and elected the following officers: President, Dr. Harrison G. Blake, Woburn; vice-president, Dr. Corydon W. Harlow, Melrose Highland; councilors, Drs. George N. P. Mead, Winchester, Francis E. Park and Arthur H. Cowdrey, Stoneham, Silas H. Parks and Robert T. Edes, Reading; censors, Drs. Francis E. Park, Stoneham, Mott A. Cummings, Winchester, George F. Dow, Reading, Ernest S. Jack, Melrose, and William H. Kele-

her, Woburn, and auditor, Dr. Lilley Eaton, Winchester.——The annual meeting of the North Essex District Medical Society was held in Lawrence, May 2. The following officers were elected: Dr. William J. Sullivan, Lawrence, president; Dr. Charles E. Durant, Haverhill, vice-president; Dr. Maurice D. Clark, Haverhill, secretary and treasurer; Dr. R. D. Hamilton, Newburyport, corresponding secretary; Dr. J. S. Pierce, Haverhill, auditor; Dr. Leyander J. Young, Haverhill, supervising censor; Drs. Israel J. Clark, Haverhill, J. Forrest Burnham, Lawrence, Joseph A. Hogan, Lawrence, Richmond B. Root, Georgetown, John A. Douglass, Amesbury, and Ernest H. Noyes and Warren W. Pillsbury, Newburyport, councilors; Dr. Israel J. Clark, Haverhill, nominating councilor; Dr. Warren W. Pillsbury, Newburyport, alternating councilor, and Dr. John F. Young, Newburyport, commissioner of trials.

MICHIGAN.

Medical Student Killed.—Leland P. Beverlin, 29 years of age, a senior student of the Michigan College of Medicine, Detroit, was instantly killed in a runaway accident, May 17.

Diphtheria.—A number of cases of diphtheria are reported on Washington Island, near Jackson Harbor. All efforts to stamp out the disease appear thus far to have been futile.

Alumni Meeting.—The Detroit College of Medicine Alumni Association has just completed a ten-day clinic. At the annual luncheon, May 17, 400 guests were present, and the following officers were elected: President, Dr. Louis J. Hirschman, Detroit; vice-president, Dr. Richard C. Buchanan, Green Bay, Wis.; secretary and treasurer, Dr. John C. Dodds, Detroit, and historian, Dr. E. C. Rumer, Davison, Mich.

Wayne County Officers.—Wayne County Medical Society, at its annual meeting in Detroit, May 18, elected the following officers: President, Dr. J. Henry Carstens; vice-president, Dr. William F. Metcalf; secretary and treasurer, Dr. Walter D. Ford; and directors, Drs. George W. Wagner, H. Wellington Yates, Louis J. Hirschman, Guy L. Kiefer and Frank B. Tibbals, all of Detroit. The society now has 475 members, an increase of 85 since the last annual meeting.

Personal.—Dr. Ernest C. Lee, Detroit, having passed the required examination before the state military medical board, has been commissioned assistant surgeon in the Michigan National Guard, with the rank of first lieutenant.——Dr. Edward M. Libby has been appointed health officer of Iron River.——Dr. Charles J. Sorsen, Calumet, sails from New York for Europe, June 9.——Dr. John L. Chester has been appointed health officer of Emmett.——Dr. Joseph B. Griswold, Grand River, has resigned from the State Board of Legislation and Medicine on account of press of other duties.

April Mortality.—During April 3,097 deaths were reported in the state, equivalent to an annual rate of 14.6 per 1,000. This is slightly lower than the rate for the preceding month, 14.8, but a little higher than the death rate for the corresponding month of 1905, which is 14.4. There were 4,259 births returned during the month. Among the important causes of death were: Pneumonia, 341; tuberculosis, 255; accident and violence, 157; cancer, 131; influenza, 61; meningitis, 51; diarrheal diseases of infants, 50; whooping cough, 45; measles, 42; diphtheria, 36; typhoid fever, 30, and scarlet fever, 28. There was an increase in the mortality from tuberculosis, typhoid fever, measles, enteritis, meningitis, influenza and violence, but a decrease in the deaths from other important causes.

State Society Meeting.—The forty-first annual meeting of the Michigan State Medical Society was held in Jackson, May 20, 21 and 22, under the presidency of Dr. David Inglis, Detroit. Mayor Todd welcomed the visitors to Jackson, and Dr. Albert E. Bulson delivered the address of welcome on behalf of the Jackson County Medical Society. Aside from the literary work, the society declared its belief that the code of ethics was not adhered to with sufficient strictness and adopted a resolution recommending that all medical schools give special instructions in this regard. A committee was appointed to investigate the so-called lodge practice and contract work, and a recommendation was adopted advising amendments to the laws of the state providing for compensation for animals killed after tests for tuberculosis. A committee on study and prevention of tuberculosis was added to the list of standing committees of the society. The following resolution was also passed unanimously:

> That in order to attain the highest efficiency in medical education in this state, giving the greatest number of instructors to a given number of students, together with greatly increased clinical facilities, we view with favor the proposed amalgamation of the Medical department of the University of Michigan with the Detroit College of Medicine.

Drs. J. N. McCormack, Bowling Green, Ky., John B. Murphy, Chicago, William Parmenter, Vermontville, Mich., and Johann Flintermann, Detroit, were elected honorary members of the society. The following officers were elected: President, Dr. Charles B. Stockwell, Port Huron; vice-presidents, Drs. William Fuller, Grand Rapids, Edward T. Abrams, Dollar Bay, Delbert E. Robinson, Jackson, and Allison R. Stealy, Charlotte; secretary-editor, Dr. Benjamin R. Schenck, Detroit; treasurer, Dr. George W. Moran, Detroit; delegates to the American Medical Association, Drs. Albert J. Lawbaugh, Calumet, and Leartus Connor, Detroit, and alternate, Dr. Orton H. Clark, Kalamazoo. The 1907 meeting will be held in Saginaw.

MISSOURI.

Dispensary Physician Resigns.—Dr. Edward J. Ernst, assistant chief dispensary physician of St. Louis, has resigned.

Smallpox.—Carthage has had 10 cases of smallpox in its vicinity. There is no disease reported in the town at present and the jail quarantine has been raised.

Smallpox Closes Schools.—The McKinley and Hosea schools, St. Joseph, have been closed for the remainder of the term on account of smallpox among the pupils.

Portrait Presented.—A life-size oil painting of Dr. Gustaf Baumgarten, who has been a member of the faculty of the Medical Department of Washington University for 33 years, was presented by the faculty and students of the department, to the institution, May 27.

Graduation Exercises.—A class of 55 was graduated from the Medical Department of Washington University, May 24. Chancellor W. S. Chapman, Washington University, conferred the degrees. Dr. Robert Leudeking awarded the prizes and the doctorate address was made by Dr. Maurice H. Richardson of Harvard University Medical School.

Physicians and Nurses for School Emergencies.—The board of health of St. Louis has approved a proposition submitted by the Provident Association to supply physicians and trained nurses to be within call of all public schools for emergencies. The matter was referred to the legislative committee, consisting of H. A. Foreman and A. Merrel, who will draft the ordinance.

Found Guilty.—Dr. John B. French, St. Louis, was found guilty by a jury in the United States District Court, May 23, of sending unmailable matter through the mails and offering for sale medical preparations prohibited by law. Indictments were found against him on four counts by the federal grand jury, and he was found guilty on three of the four. Sentence was deferred.

Board of Health Appointments.—The following appointments were made May 24 by the St. Louis board of health: Dr. John W. Shanklin, assistant superintendent of the City Hospital, and Drs. Paul McMullan, R. C. Strohl and S. K. Guggenheim, assistants; Dr. C. H. Shoot, assistant superintendent, and Drs. Edwin Sheehan and H. F. Lincoln, assistants at the Emergency Hospital; Dr. Daniel Shoemaker, assistant city bacteriologist.

Postgraduate Teaching in St. Louis.—At a conference between the secretaries of the Missouri State University and the trustees of the Barnes Hospital Fund, held May 25, it was decided to establish a postgraduate medical department of the State University in St. Louis and to make it a part of the new Barnes Hospital. A committee was appointed to meet the Barnes trustees and complete arrangements for the erection of the institution. The Barnes Fund, which amounts to $1,000,000, was bequeathed for the endowment of a hospital to be known by the name of the Barnes Hospital. The site for this institution was purchased some time ago. The work of erection will begin some time this summer. The next legislature will probably be called on to appropriate money for the maintenance of the new department of the university.

NEW YORK.

Municipal Hospital.—The new municipal hospital, Buffalo, is to be completed and turned over to the health department early in June. It has been erected at the cost of $50,000, and is intended to care for all varieties of contagious diseases.

Commencement.—The sixtieth annual commencement of the University of Buffalo, Medical Department, was held June 1, when a class of 44 was presented to Vice-Chancellor Norton by Dr. Ely H. Long, secretary of the faculty, and received diplomas. Dr. Edward N. Brush, Baltimore, was the principal orator of the day.

Personals.—Dr. Augustus G. Pohlman, Buffalo, has been appointed associate professor of anatomy in Indiana University, Bloomington.——Dr. William J. O'Donnell, Buffalo, sails for Europe early in June.——Drs. Nelson G. Russell, Norman L. Burnham and Eugene A. Smith have sailed for Europe.——Dr. Ray Beardsley has been elected health officer of Binghamton, vice Dr. J. Adelbert Hix.——Dr. Adolph Latellier has been elected health officer of Seneca Falls.

New York City.

Want Investigation.—Within a week two patients with fractured skulls have been transferred to Bellevue as alcoholic cases. Both patients died, and Superintendent Armstrong is about to make an investigation in order to place the responsibility of the transfer of the dying patients to the hospital under wrong diagnoses.

Memorial to Fowler.—At the last meeting of the Kings County Medical Society a tablet in memory of Dr. George Ryerson Fowler was unveiled in the library of the society. It is oblong, with panels for inscriptions on either end, and a bronze bust of Dr. Fowler in the center. The presentation was made by Dr. Lewis S. Pilcher, and Dr. William F. Campbell received the tablet on behalf of the society.

Contagious Diseases.—During the week ended May 26, 1,111 cases of measles were reported, with 35 deaths; 404 cases of tuberculosis, with 184 deaths; 378 cases of diphtheria, with 46 deaths; 219 cases of scarlet fever, with 31 deaths; 38 cases of whooping cough, with 7 deaths; 37 cases of typhoid fever, with 9 deaths; 35 cases of cerebrospinal meningitis, with 23 deaths; 111 cases of varicella, and 2 cases of smallpox, a total of 2,335 cases and 335 deaths.

The Seaside Hospital.—The board of estimate heard suggestions for the proposed park and convalescent hospital on June 2. The legislature has authorized the city to spend $2,500,000. The committee will probably report in favor of Rockaway Park, where the site under consideration consists of 800 acres. The unreasonable demands of the Rockaway owners stand in the way of progress at present, but it is hoped that the city will be able to procure the property at its own price.

Uniform Hospital Accounting.—The hospital committee has turned in its final report, in which it recommends a system of uniform accounting, which shall take into consideration differences of conditions affecting different hospitals. It will first be necessary to have an intelligent classification of the various hospitals of the city, so that in the comparisons that are to be made only those institutions that are fairly comparable shall be classed together. Roosevelt, Presbyterian, New York and St. Luke's hospitals have already perfected a system of uniform accounting for themselves. It is suggested that, after the adoption of a uniform system of accounting, the city's per diem allowance to the hospitals already receiving municipal aid be increased.

NORTH DAKOTA.

Smallpox.—A case of smallpox has developed at Emerado. ——Five cases of smallpox are reported to be under quarantine at Antler.——An alderman of Grand Forks is quarantined in his house on account of smallpox.

Grand Forks Wants Hospital.—The Commercial Club of Grand Forks has already obtained subscriptions amounting to $6,100 toward the $15,000 required, before Bishop Shanley will undertake the erection of a 60-bed hospital in Grand Forks.

State Society Meeting.—The nineteenth annual session of the North Dakota State Medical Association was held at Fargo, May 16 and 17, under the presidency of Dr. Paul Sorkness, Fargo. Mayor Johnson welcomed the association and Dr. Dwight S. Moore, Jamestown, responded. The president in his address advocated that the association take an active part in the national movement to arrange for the erection of a monument to Dr. N. S. Davis. He also made recommendations relative to fees for life insurance examinations and expert testimony. The committee on tuberculosis submitted a report, recommending that a bill for the prevention of the disease be drafted and introduced at the next session of the state legislature. Prof. F. E. Ladd of the state pure food department gave an address in which he sketched the history of pure-food legislation in North Dakota, and detailed the improvement in food and the decrease in adulteration since the work was initiated in 1902. He inveighed against the use of "patent medicines" and nostrums, and described the majority of nostrums as intended to defraud the public without regard to the effect they might have on the health. The following officers were elected: President, Dr. Robert D. Campbell, Grand Forks; vice-presidents, Drs. Charles MacLachlan, New Rockford, John E. Countryman, Grafton, and W. H. M. Philip, Hope; secretary, Dr. Hezekiah J. Rowe, Casselton (re-elected), and treasurer, Dr. J. Dempster Taylor, Minot; and councilors, Drs. Paul Sorkness, Fargo, Andrew Carr, Minot, Edgar A. Pray, Valley City, and John Crawford, Esmond. Dr. James P. Aylen, Sheldon, and Henry G. Woutat, Grand Forks, were recommended for reappointment on the State Board of Medical Examiners. At the annual banquet Dr. Hezekiah J. Rowe, Casselton, officiated as toastmaster. The society adjourned to meet in 1907 at Minot.

OHIO.

Ohio Ophthalmological Society.—The eye, ear, nose and throat section of the Ohio State Medical Association elected the following officers: Chairman, Dr. Charles F. Clark, Columbus; secretary, Dr. Walter H. Snyder, Toledo, and treasurer, Dr. Wylie McL. Ayres, Cincinnati.

Hemmeter in Cleveland.—Dr. John C. Hemmeter of the University of Maryland, Baltimore, addressed the Academy of Medicine, Cleveland, May 11, on "Certain Diseases of the Digestive Tract that are on the Border Line between Internal Medicine and Surgery." On the following day Professor Hemmeter gave a clinic at the Northwestern Reserve University.

State Pediatric Society.—The Ohio State Pediatric Society held its annual session at Canton, May 8. The following officers were elected: Dr. William W. Pennell, Mount Vernon, president; Drs. J. Morton Howell, Dayton, and John D. Dunham, Columbus, vice presidents; Dr. Jesse M. Moore, Cleveland, secretary and Dr. Myron Metzenbaum, Cleveland, treasurer.

State Dermatological Society.—At the annual meeting of the State Dermatological Society, which has decided to affiliate with the State Medical Association, the following officers were elected: Dr. Meyer L. Heidingsfeld, Cincinnati, president; Dr. Edward A. Montenyohl, Akron, vice-president; Dr. E. Otis Smith, Cincinnati, secretary, and Drs. Walter Q. Le Fevre and William E. Sampliner, Cleveland, and Edwin D. Tucker, Toledo, executive committee.

Ohio State Medical Association.—The annual meeting of the association was held in Canton, May 9, 10 and 11, under the presidency of Dr. Thomas C. Martin, Cleveland. It was reported that of the 88 counties in Ohio 87 were organized, leaving Pickaway County the only one still unorganized. Dr. John C. Hemmeter, of Baltimore, was the guest of honor of the association and delivered an address on "Autointoxication from the Digestive Tract." Dr. Harvey Gaylord, Buffalo, delivered the address in surgery on "The Etiology of Cancer." The following officers were elected: Dr. Benjamin R. McClellen, Xenia, president; Drs. John S. Deemy, Bellefontaine, Frank E. Bunts, Cleveland, William W. Pennell, Mount Vernon and Charles F. Clark, Columbus, vice-presidents; Drs. Frank D. Bain, Kenton, and Alonzo B. Walker, Canton, delegates to the American Medical Association, and Drs. John S. Beck, Dayton, B. H. Blair, Lebanon, Edmund C. Brush, Zanesville, Frank Winders, Columbus, and Harris G. Sherman, Cleveland, alternates. The following councilors were elected: Drs. Frank D. Bain, Kenton, third district, and Charles S. McDougall, Athens, eighth district. Dr. Charles A. L. Reed, Cincinnati, was elected delegate to the national legislative council. The society adjourned to meet at Cedar Point, in 1907.

PENNSYLVANIA.

Acquitted.—Dr. Edward J. Hadfield, Phœnixville, charged with performing a criminal operation, was acquitted May 5.

Hospital News.—At a special meeting of the trustees of Lewiston Hospital, Dr. Alexander S. Harshberger was re-elected president and the other officers were also re-elected. ——The new Johnstown City Hospital has been formally opened and is now ready to receive patients.——Sewickley is to have a new hospital, to cost $40,000, $30,000 of which has already been subscribed.

Neurologic Clinics.—Drs. Theodore Diller and Thomas M. T. McKennan, Pittsburg, have been appointed visiting neurologists to Marshalsea, the municipal hospital for the insane, Pittsburg. A series of six weekly clinical conferences is being held at the institution, which is open to physicians and medical students. This series began on May 18. The hospital at Marshalsea contains about 600 patients and the various psychoses are well represented.

West Branch Society Meeting.—The annual meeting of the West Branch Medical Association, made up of eight counties in Central Pennsylvania, was held at Williamsport, April 26. The following officers were elected: President, Dr. Spencer M. Freer, Du Bois; vice-presidents, Drs. G. Franklin Bell, Williamsport, and William E. De Laney, Slate Run, and secretary and treasurer, Dr. Joseph M. Corson, Chatham Run. It was decided to hold the next meeting at Lock Haven in 1907.

County Society Meeting.—At the regular meeting of the Susquehanna Medical Society, held in Montrose, May 1, the following officers were elected: President, Dr. Clayton Washburn, Susquehanna; vice-president, Dr. William B. Beaumont, West Auburn; secretary, Dr. Edward R. Gardner, Montrose; treasurer, Dr. John G. Wilson, Montrose; censors, Drs. John G. Wilson, Irving P. Schoonmaker, Halstead, and Dever J. Peck, Susquehanna, and district censor, Dr. Samuel Birdsall, Susquehanna.

Typhoid in Berks County.—During the past three months there have been reported in Wernersville thirty cases of typhoid fever and several persons are still ill with the disease. At the direction of the state commissioner of health, Dr. Israel Cleaver, Reading, medical inspector of Berks County for the State Health Department, made an investigation. Many of the patients are school children, and an analysis of the water from the wells which supply the school demonstrated that this was the probable source of infection.

Personal.—Dr. Joseph D. Findley has been elected physician of the board of health of Altoona.——Dr. Lawton M. Hartman, York, has sailed for Europe.——Dr. Lorenzo W. Swope, Pittsburg, has been appointed chief surgeon for the Wabash Lines. ——Dr. Daniel W. Jefferis, Chester, has been appointed city physician.——Dr. John F. McGrath has been appointed physician for the department of public safety of Pittsburg, vice Dr. Alexander E. McCandless.——Dr. James F. Edwards, U. S. Army, retired, has been appointed superintendent of the Pittsburg bureau of health.——Dr. Alfred L. Dennis, Conneautville, has been appointed surgeon for the Bessemer Railroad.——Dr. A. Miner Straight, Bradford, is recovering from his recent serious illness.——Dr. Philip L. Reichard, Allentown, was operated on recently in Philadelphia for the removal of a cataract.—— Dr. Walter Davis, Wilkesbarre, suffered a dislocation of the shoulder and serious lacerations and contusions in a runaway accident, May 21.

Philadelphia.

Convicted of Illegal Practice.—Amos Glasgow, a negro, was convicted on May 18 of practicing medicine without being a registered physician and was fined $50 and costs.

Medico-Chirurgical Commencement.—The annual commencement of the Medico-Chirurgical College was held June 2, when a class of 118 was graduated. The class-day exercises were held June 1 and the address was delivered by Dr. Judson Daland of the faculty.

Pass Examinations.—The Civil Service Commission announced yesterday the results of the examination for resident physicians to the Philadelphia General Hospital. The examination was held May 12, and eighty-six of the contestants received a mark of 70 or higher.

Faith Curists Indicted.—Three faith curists, members of the "Faith Tabernacle," were indicted by the grand jury June 2 on the charge of manslaughter, arising from the death of a little girl, the daughter of one of the men found guilty. Medical attention was absolutely denied the child.

Dr. Brinton Resigns.—Dr. John H. Brinton, for twenty-four years professor of surgery and clinical surgery at Jefferson Medical College and one of the four who comprised the first board of surgeons of the present Jefferson Hospital, has resigned, to take effect at the end of the present term.

Dr. Coplin to Be Honored.—The appreciation shown by the Philadelphia profession of the progressive work instituted by Dr. W. M. Late Coplin, medical director of the Department of Health and Charities, will be evidenced by a reception in his honor, arranged by the Medical Club, to be held in the Hotel Majestic, June 15.

Jewish Hospital Report.—At the forty-first annual meeting of the Jewish Hospital Association, May 27, the president reported that 7,131 patients had been cared for during the year, or 246 more than those treated in the preceding year. Of these, 1,586 were free patients. During the year 17,446 prescriptions were compounded.

Women Graduates.—At the annual commencement of the Women's Medical College a class of twenty-four was graduated. The diplomas were awarded by Mrs. Mary E. Mumford, president of the board of corporators of the college, and the doctorate address on "The Woman as a Physician" was delivered by Dr. Elliott, of New York City.

Hospital Dedication.—The new wing of St. Agnes Hospital was dedicated with appropriate ceremonies May 29. With this addition to the institution St. Agnes Hospital becomes the largest hospital building in the city under one roof, and the capacity of the institution is more than doubled. There are 300 private rooms. The majority of these have been furnished by individuals. The ground floor contains the new dispensary, operating room for minor accident cases; the fourth floor contains three operating rooms, and connected with each of these is a complete sterilizing plant and rooms for the administration of anesthetics.

Health Report.—The total number of deaths reported in the city during the week aggregated 444, as compared with 519 reported last week and 450 in the corresponding week of last year. The principal causes of death were: Typhoid fever, 28; measles, 7; whoopingcough, 13; diphtheria, 10; consumption, 53; cancer, 25; apoplexy, 18; heart disease, 41; acute respiratory diseases, 46; enteritis, 22; Bright's disease, 38; suicide, 4; accidents, 19, and marasmus, 5. There were 308 cases of contagious disease reported, with 39 deaths, as compared with 381 cases and 47 deaths. Typhoid fever is on the decrease, 170 cases being reported this week, whereas 255 cases with 33 deaths were reported in the preceding week.

Personal.—Dr. De Forest Willard, who is suffering from pneumonia and is still seriously ill, has been operated on for pulmonary abscess. A rib was resected and drainage instituted. He bore the operation well.——Dr. Charles P. Noble gave a reception in honor of Drs. Wesley Bovée, Washington; Guy S. Hunner, Baltimore, and Ellice McDonald, New York, on May 9.——Dr. Mary W. Griscom sailed for Europe June 2. ——Dr. George E. Pfahler sailed for Europe May 31.——Dr Clara Marshall, dean of the Woman's Medical College, whose resignation was presented to the trustees some months ago, relinquished her connection with the institution June 1 and has been succeeded by Dr. Arthur A. Stevens.

Jefferson Alumni Meeting.—At the annual meeting of the Alumni Association of the Jefferson Medical College, June 1, the following officers were elected for the ensuing year: President, Dr. W. M. Late Coplin; recording secretary, Dr. Charles S. Barnes; corresponding secretary, Dr. Aller G. Ellis, and treasurer, Dr. Randle C. Rosenberger. The annual dinner of the association was held on the evening of the same date at the Bellevue-Stratford, 250 members being present. Dr. George B. McClellan, the retiring president and newly elected professor of anatomy, acted as toastmaster. Toasts were responded to by Albert Johnson, representing the board of trustees; Dr. Edward C. Spitzka, the newly elected professor of anatomy, representing the faculty; Dr. William B. Hale for the press, Dr. Harvey Buchanan for the class of 1896, Dr. F. O. Lewis for the class of 1906 and Dr. J. W. West for the alumni.

SOUTH DAKOTA.

Personal.—Dr. George H. Stidworthy, Viborg, sailed for Europe May 10.——Dr. Viadinne Siakin-Ross, formerly superintendent of the State Insane Hospital, Yankton, has decided to locate in Sioux Falls.

Medical Examiners Appointed.—The governor appointed as members of the State Board of Medical Examiners to succeed themselves, Drs. Stephen Olney, Sioux Falls, Hans M. Finnerud, Watertown, and H. E. McNutt, Aberdeen.

District Medical Society.—The annual meeting of the Fourth District Medical Society of South Dakota was held in Huron April 13. Dr. John L. Foxton, Huron, was elected president; Dr. Isaac M. Burnside, Highmore, vice-president; Dr. Charles J. Lavery, Fort Pierre, secretary, and Dr. Delorme W. Robinson, Pierre, treasurer.

State Association Meeting.—The twenty-fifth annual meeting of the South Dakota State Medical Association was held in Watertown, May 22, 23 and 24, under the presidency of Dr. Adelbert H. Bowman, Deadwood. On the evening of May 23 the members were the guests of the Watertown District Medical Society at a banquet. Mayor J. W. Martin delivered the address of welcome, which was responded to by Dr. E. Frank Reamer, Mitchell. It was decided to hold the next annual meeting at Sioux Falls. Dr. Edwin T. Ramsey, Clark, was elected president, and Dr. Frederick Freyberg, Mitchell, councilor for the district and secretary of the board of councilors.

CALIFORNIA NEWS.

Ready to Give Aid.

The physicians' relief committee on May 18 announced that it was prepared to issue aid to physicians and their families. Members of the profession in need were requested to apply to Dr. Fred W. Lux at the Lane Hospital. It was then stated that there were about 1,500 physicians without money and with no prospect of earning any at present.

Tribute to San Francisco Physicians.

Dr. N. K. Foster, secretary of the California State Board of Health, says:

There is no class of people on earth who have made such a record for themselves as have the physicians of San Francisco and vicinity during the late disaster, and it is due to their efforts that no epidemic followed the fire that made many thousands homeless. This disaster has been harder on the fraternity than any other class, and none of them will fully recover from their losses. They have lost their practice, instruments, their libraries, and in some instances, lost heart, which is the worst loss of all.

Books for California Physicians.

Dr. G. C. Savage, Nashville, Tenn., writes that he has sent 35 copies of each of his two latest books to the San Francisco committee, and suggests that it would be well if other authors in the United States would do likewise.

Acknowledgments.

The San Francisco relief committee has sent the following acknowledgment to the Norfolk District (Mass.) Medical Society:

The committee begs to tender you and your confrères its sincere thanks for your noble and generous impulse. By those only who have sustained a similar affliction, being bereft of all they possess in a few short hours, can the action of your society be truly and deeply appreciated.

Dr. James W. Ward, president of the health commission of San Francisco, acknowledges in the following words the high esteem in which the services of Oregon physicians were held:

I desire on the part of the health commission of the city and county of San Francisco to extend to you, and through you, to the Third Regiment of the Oregon Hospital Corps, our sincere appreciation of your valuable service in San Francisco. It has been an object lesson to the medical profession of San Francisco to note the exactness with which your duties were performed, which have been to the satisfaction of all who know the extent of your services.

Funds for California Sufferers.

NEW YORK CITY, May 27, 1906.

To the Editor:—The committee on medical relief of the California sufferers, i. e., of medical men and their families, appointed by the New York Academy of Medicine and the county societies of New York and Richmond, have raised up to date $5,706. Most of this has been by individual subscriptions, but several medical societies have contributed most generously. When the promised funds are all in we shall have over $7,000.

Through the kind offices of Dr. Francis P. Kinnicutt, the chamber of commerce has appropriated $5,000 out of its fund to be used for relief of medical men in connection with our fund.

CHARLES L. DANA.

California Fund.

The following additional contributions have been received at THE JOURNAL office up to 9 a. m., Wednesday, June 6:

Brooks, G. F., Stevenson, Minn	$ 5.00
Buffum, J. H., Vermont	1.00
Decatur (Ill.) Medical Society	6.00
Caverly, C. S., Wallingford, Vt.	5.00
Colby, B. D., Vermont	2.00
Fawcett, W. C., Devil's Lake, N. Dak	10.00
Hack, T. H., Vermont	2.00
Hammond, S. W., Vermont	1.00
Hirschberg, J. (Prof.), Berlin, Germany	10.00
Lape, R., Vermont	2.00
Louisville (Ky.) Society of Medicine	25.00
Manchester, H. L., Vermont	1.00
Marshall, G. G., Vermont	1.00
Michigan State Medical Society, Detroit, Mich	500.00
Moeller, Thor., Devil's Lake, N. Dak	5.00
Peck, C. W., Vermont	1.00
Rutland County (Vt.) Medical and Surgical Society	50.00
Swift, H. H., Wallingford, Vt	5.00
Woodward, A. T., Wallingford, Vt	5.00
Strobell, C. W., Vermont	1.00

Kanawha (W. Va.) Medical Society, $33.00:

Barber, T. L.	$1.00	McConihay, J. M.	$2.00
Burns, R.	2.00	McMillan, W. A.	1.00
Cannaday, J. E.	1.00	Nicholson, H. G.	1.00
Champe, I. P.	2.00	O'Grady, Charles	2.00
Churchman, V. T.	2.00	Ritter, W. E.	2.00
Copeland, C. E.	2.00	Robertson, H. L.	1.00
Davis, E.	1.00	Schofield & Young	5.00
Davis, R. T.	1.00	Sharp, J. T.	1.00
Friedenwald, E. B.	2.00	Shawkey, A. A.	1.00
Haley, P. A.	1.00	Tompkins, W. W.	2.00

Orleans (La.) Parish Medical Society, $50.00:

Chaille, S. E.	$10.00	Holt, Joseph	$5.00
Danna, J. A.	10.00	Lowe, M. M.	3.00
Gessner, H. B.	2.00	Michinard, Paul	10.00
H. D. B.	5.00	Provosty, L. M.	5.00

Pottawottamie County (Iowa) Medical Society, $21.00:

Cole, J. H.	$5.00	Macrae, D.	$5.00
Dean, F. W.	5.00	Rice, N. J.	1.00
Houghlan, F. W.	5.00		

Total	$ 742.00
Previously acknowledged	10,184.40
Grand total	$10,926.40

GENERAL.

Physicians Needed for Navy.—It is reported that there are a number of vacancies in the medical corps of the United States Navy. In addition to the salary there is opportunity for a varied professional experience and practical work along lines which do not present themselves to the ordinary practitioner.

Leper Colony in the Philippines.—The first permanent leper colony in the Philippine Islands has been established at Colion Island and 200 lepers have been removed to that place from Cebu. Four Roman Catholic sisters have volunteered their services and are now on their way to the settlement to nurse the afflicted.

Dermatologists Elect.—At the thirtieth annual meeting of the American Dermatological Association, held in Cleveland, May 31 and June 1 and 2, the following officers were elected: President, Dr. Arthur Van Harlingen, Philadelphia; vice-president, Dr. William A. Pusey, Chicago, and secretary and treasurer, Dr. Grover W. Wende of Buffalo.

Aesculapian Society Meeting.—At the fifty-ninth semi-annual meeting of the Æsculapian Society of the Wabash Valley, held in Robinson, Ill., May 31, Dr. John F. Percy, Galesburg, president of the Illinois State Medical Society, was the guest of honor. Dr. Herbert N. Rafferty, Robinson, was elected secretary and treasurer to fill the vacancy occasioned by the death of Dr. Harry McKennan, Paris.

Food Standards.—The committee on food standards, Association of Official Agricultural Chemists, which has been commissioned by the authority of congress to collaborate with the Secretary of Agriculture in fixing standards of purity for foods and determining what shall be regarded as adulterations therein, will hold its next meeting June 18, at the bureau of chemistry, Washington, D. C.

Genitourinary Surgeons Meet.—At the twentieth annual meeting of the American Association of Genitourinary Surgeons, held at the Academy of Medicine, New York City, June 1 and 2, the following officers were elected: President, Dr. William K. Otis, New York City; vice-president, Dr. Harvey G. Mudd, St. Louis; secretary and treasurer, Dr. John Van der Poel, New York City, and member of council, Dr. Hugh H. Young, Baltimore.

American Surgical Association.—At the twenty-sixth annual meeting of the American Surgical Association, held in Cleveland, June 1, Dr. Dudley P. Allen, Cleveland, was elected president; Drs. Thomas W. Huntington, San Francisco, and Augustus F. Jonas, Omaha, Neb., vice-presidents; Dr. Robert G. Le Conte, Philadelphia, secretary; Dr. Charles A. Powers, Denver, treasurer; Dr. Richard H. Harte, Philadelphia, recorder, and Dr. Albert Van der Veer, Albany, N. Y., councilor. It was decided to hold the next meeting in Washington, D. C.

Civil-Service Examinations.—The United States civil-service commission announces the following examinations: On July 5 and 6 an examination will be held to secure eligibles from which to make certification to fill vacancies in the positions of hospital internes (male) under the Isthmian Canal commission as they may occur. Two days will be required for the examination. Each applicant must submit to the examiners a recent photograph of himself as a means of identification. An unmounted photograph is preferred. The age limit is between 20 and 30 years; salary, $100 a month, with quarters, but without board and washing. Only graduates of reputable medical schools having not less than a three years' course will be admitted to the examination. On the same date the examination originally scheduled for June 6 and 7 will be held to secure eligibles from which to make certification to fill at least two vancancies at $600 per annum each, with maintenance, in the position of medical interne in the Government Hospital for the Insane, Washington, D. C. Two days will be required for the examination. Men only will be admitted. Age limit, 20 years or over at the time of the examination, and the applicants must be graduates of reputable medical colleges. Applicants for either of these positions should apply

at once at the United States Civil-Service Commission, Washington, D. C., which will also give information as to the places where examinations will be held.

Oklahoma and Indian Territory Society Meeting.—The Oklahoma and Indian Territory medical associations held a joint meeting in Oklahoma City, May 7, 8 and 9, under the presidency of Dr. Newton N. Rector, Hennessey, president of the Oklahoma State Medical Association. The address of welcome was delivered by Dr. Aarcha K. West, Oklahoma City, and responded to on behalf of the Indian Territory association by its president, Dr. Virgil Berry, Wetumka, and on behalf of the Oklahoma association by Dr. A. L. Blesh, Guthrie, chairman of the council. The house of delegates adopted a resolution that hereafter the rules and by-laws of the association conform with those of the American Medical Association. Dr. Jabez N. Jackson, Kansas City, Mo., guest of the association, delivered an address on the standing of the medical fraternity in the West and on the future of the organization. The association adopted the title of Oklahoma State Medical Association, pending the union of Oklahoma and Indian Territory into one state. The following officers were elected Dr. Benjamin F. Fortner, Vinita, I. T., president; Drs. Mahlon A. Kelso, Enid, Okla., Walter C. Bradford, Shawnee, Okla., and Floyd E. Waterfield, Holdenville, I. T., vice-presidents; Dr. Eugene O. Barker, Guthrie, Okla., secretary and treasurer; and Drs. Fred S. Clinton, Tulsa, I. T., and John A. Hatchett, El Reno, Okla., delegates to the American Medical Association. The following councilors were elected: Drs. A. L. Blesh, Guthrie, LeRoy Long, South McAlester, I. T., Franklin M. Duckworth, Claremore, I. T., Bascom J. Vance, Checotah, I. T., Eliphalet N. Wright, Olney, I. T., Ney Neill, Mangum, Okla., Herbert P. Wilson, Wynnewood, I. T., Everett S. Lain, Weatherford, Okla., James H. Medaris, Helena, Okla., and Gregory A. Wall, Oklahoma City. Shawnee was selected as the next place of meeting, and $100 was subscribed for the relief of the physicians of San Francisco.

CANADA.

Toronto Clinical Society.—The following are the officers elected for 1906-1907: President, Dr. H. B. Anderson; vice-president, Dr. H. A. Bruce; treasurer, Dr. Geoffrey Boyd; recording secretary, Dr. George Elliott; corresponding secretary, Dr. W. J. McCollum.

Toronto Pathological Society.—The Toronto Pathological Society has elected the following officers for the ensuing year: President, Dr. J. A. Amyot; vice-president, Dr. W. H. Pepler; treasurer, Dr. C. J. Wagner; corresponding secretary, Dr. E. Stanley Ryerson; recording secretary, Dr. H. G. Hutchison.

Annual Meeting of the French-Speaking Physicians of North America.—The third congress of the Association of the French-Speaking Physicians of North America will be held at Three Rivers, P. Q., June 26-28. The president is Dr. L. P. Normand, Three Rivers, and the general secretary, Dr. Charles De Blois, Three Rivers. The principal questions to be taken up and discussed at this meeting will be alcoholism, infantile hygiene and tuberculosis.

FOREIGN.

Epidemic Cerebrospinal Meningitis in Germany.—Owing to the appearance of epidemic cerebrospinal meningitis at Döberitz, the maneuvers of the troops have been abandoned for the present. The disease has also appeared in epidemic form at Posen, and 38 cases have been reported in Switzerland.

Degree Conferred on von Bergmann by Edinburgh University.—In April E. von Bergmann of Berlin went to Edinburgh to receive the degree of Doctor honoris causa which was conferred on him at the ceremonies attending the graduation of 200 baccalaureates.

Pension for Madame Curie.—The French government has bestowed a pension of 12,000 francs, about $2,400, on the widow and children of Professor Curie. Madame Curie has also been appointed to a chair of physics at the university, with laboratory, continuing her husband's life work and her own research.

Plague in Straits Settlements.—Consul-General Michael, at Calcutta, reports that the government of Bengal, in consequence of the outbreak of plague in Wellesley province, Straits Settlements, has declared Penang an infected port, and that the regulations for the prevention of the introduction of plague by sea, which are in force in the port of Bengal, will be enforced in the ports of Orissa.

International Antiquackery Committee.—The organization of an international committee to discuss ways and means for combating quackery was recently mentioned in these columns. It is announced that five European bodies have already appointed delegates to the committee. They are the Carlsruhe board of public health, and the Swedish, Dutch, German and Austrian national associations for combating quackery.

Privileges for Physicians.—The *Deutsche med. Wochft.* states that the German government has ordered that the expenses of courses of mineral waters at certain spas are to be remitted in case of registered physicians and dependent members of their immediate families, including their servants. At Ems the baths, inhalations and mineral water for drinking are free to them; at other resorts only the baths and waters.

Hospitals for the Straits Settlements.—A new hospital for the treatment of beriberi has been built at Passid Panjang, in the Straits Settlements, to isolate and to deal under the best conditions with the cases of this disease which occur among the patients in the lunatic asylum, the general hospital and the prisoners in jail. The *Indian Medical Gazette* states that a new lunatic asylum is also being built for the Straits Settlements.

Silver Jubilee of a Hungarian Medical Journal.—The leading medical journal of Hungary, *Orvosi Hetilap*, recently celebrated its fiftieth anniversary. A special number of 250 large quarto pages was issued on the occasion, containing important articles from ninety of the most prominent physicians of Hungary, we are told by the Budapest correspondent of the *Deutsche med. Wochft.* The journal is not much known in this country.

Strikes Affecting the Publication of Our Exchanges.—As already mentioned, the *Presse Médicale* of Paris has been suffering from a strike among the printers. It is now at an end, but our esteemed exchange has a gap of several numbers in its publication, the numbers between 32 and 39 being missing. The *Deutsche med. Wochft.* for May 10 also arrives with an apology for slight delay on account of a strike among the binders. The number received is not stitched.

Baeumler's Seventieth Birthday.—In 1901 Prof. C. Baeumler celebrated the twenty-fifth anniversary of his taking charge of the medical clinic at Freiburg. His seventieth birthday occurred May 13, and was duly celebrated by his friends. The *Deutsche med. Wochft.* publishes an illustrated sketch of the popular clinician in the issue for May 10, extolling especially his work as an inspiring teacher. He practiced for nine years in London, and has been a frequent contributor to German and English medical periodicals.

Brouardel Retires.—The eminent Paris authority on medicolegal questions and practice, Prof. Paul Brouardel, will be 70 years old next February. He has recently sent in his resignation from the chair of medical jurisprudence, and intends to retire definitely from his public career. He has published many works on his specialty and on medicine in general, and has been since 1878 one of the editors of *Annales d'hygiène publique et de médecine légale.* His classic volumes on death, sudden death and other medicolegal subjects have been translated into several languages. He is a familiar figure at national and international medical congresses.

Organization of the Profession in Germany.—Satisfactory arrangements have finally been concluded between the sickness insurance societies at Vohwinkel and their medical officers. This place has been on the black-list of the *Leipziger Verband* since Jan. 1, 1904, and all honorable colleagues have been warned not to accept the positions with the company. One physician was found who accepted the office and terms, but he gives up the position now without demanding an indemnity on condition that he be allowed to remain as a physician in the town and is accepted as in good ethical standing, to which the local physicians agreed.

Bubonic Plague in Australia.—It is reported that plague has again broken out in Sydney, Brisbane and West Australia. The health authorities in New South Wales, according to the *British Medical Journal*, are of the opinion that the outbreak is due to a fresh infection brought by rats from over-sea. The health authorities throughout Australia are urging more thorough destruction of rats. In Victoria the board of health has decided to enforce the regulations for shipping from other ports unless it is known that no infected rats can be found in the other states. The restrictions differ in each state and it is highly desirable that they should be uniform.

Disapproval of Design for the Virchow Statue at Berlin.—As already mentioned, the design that won the first prize represents a titan contending with a sphinx, portraying Virchow's struggle with the mysterious origin of disease. The group stands on a solid rectangular pedestal with four doric columns

carved in relief at the corners. It is a very handsome and imposing design, but the local medical societies have presented an official protest against its adoption. They say that the idea of the mysterious, the fabulous and symbolic, is so entirely opposed to all Virchow's conceptions, his whole being breathing the most lucid and limpid clarity and simple truth, that the world of science protests against such an unworthy and uncharacteristic monument to his memory. He was the highest exponent of the search for exact truth, and they state that to hand down his memory to posterity in such an involved, symbolic fashion is to honor it no more than with some cheap decoration. Our Berlin exchanges speak of it in the same tone. The design that won the second prize represents the scientist seated in an academic chair on a broad, spreading pedestal. Both are illustrated in the *Deutsche Med. Wochft.* for May 17.

Medical Progress in Turkey.—The Constantinople correspondent of the *Lancet* states that the Ottoman government has decided to build a medical school at Salonica. The necessary funds will be contributed partly by the ministry of public instruction and partly by various municipalities. This medical school is intended to be erected on the same working principles as the one existing at Damascus. This is another proof of the progress which scientific medicine has made of late in the Ottoman empire. The Turkish metropolis now possesses a good number of hospitals and medical establishments, some of which are very well organized. The Imperial Military Medical School now supplies the Turkish army every year with a numerous staff, while the Imperial Civil School of Medicine sends out annually a large number of qualified practitioners into the provinces. The medical school which was erected not long ago in Damascus serves the provinces of Syria, and many of the more important cities in the various provinces now have a hospital. Steps have also been taken to create in the far-away districts institutes for hydrophobic patients on the model of the one working at present with fairly satisfactory results in Constantinople, and this has lately received additional equipment. Veterinary science, the importance of which is so obvious when a country depends largely on the proper development of agriculture, has made similar strides of late. The ministry of public instruction has lately ordered a large number of the most modern surgical instruments from Berlin. These have already arrived and form a valuable addition to the equipment of the medical schools.

Therapeutic Prevention of Syphilitic Infection.—An important experiment with inoculation of syphilis into a human being was recently reported to the French Académie de Médecine, but the strike among the printers has prevented the publication of the official reports of the proceedings. From accounts in our British exchanges for May 19 we learn that Metchnikoff and Roux, continuing their researches on monkeys, found their previous statements confirmed in regard to the effectual prevention of the development of syphilis if inoculation with virulent human material is followed at once with inunction of a 1 to 3 calomel and lanolin ointment. Their work in this line has already been mentioned in these columns on page 310. As experiments on more than a dozen monkeys had always given positive results, they considered themselves justified in experimenting on a human subject. A fourth-year medical student, free from syphilitic taint, inherited or acquired, volunteered for experiments. On February 1 he was inoculated with syphilitic virus from two chancres, one of eight to ten days' duration, the other a month old. The inoculation was made by scarification at the junction of the glans and prepuce. At the same time they inoculated four macaques and one chimpanzee with the same material. One hour after the inoculation the medical student and one of the macaques were given an inunction with the calomel ointment, which was rubbed into the inoculated parts for eight minutes. A second macaque was given the calomel inunction after twenty hours. The chimpanzee died in a few days of bronchopneumonia. The two control monkeys developed the primary sore seventeen days after the inoculation. The macaque treated twenty hours after the inoculation developed a chancre on the thirty-second day. No symptoms appeared in the medical student or in the macaque treated with the ointment, no signs or changes in the skin or mucous membranes, lymphatic glands or viscera. Three months having now passed since the experiment, Metchnikoff and Roux regard it as conclusive, demonstrating that calomel ointment can be used as a therapeutic preventive of syphilitic infection. Of course, the confirmatory experiment of inoculation of man without the preventive inunctions is out of the question, but the result of the single experiment is confirmatory of results obtained in similar experiments on monkeys. The calomel ointment did not cause any local irritation.

LONDON LETTER.

Gloves and Postmortem Examinations.

A postmortem clerk at the Westminster Hospital died from blood poisoning after performing a necropsy. He had been out of health and had recently returned from a holiday. He seemed so ill that the assistant pathologist put him off duty and completed the necropsy himself. The deceased had a number of small abrasions and did not wear gloves. At the inquest, on being questioned on this point, the assistant pathologist stated that at the Westminster Hospital gloves were never worn at necropsies. It was not a regulation, but a "principle founded on experience and common sense." In addressing the jury, the coroner said that though at Westminster Hospital it might be regarded as common sense not to wear gloves, it was not easy to say that institutions where gloves were worn were not actuated by common sense. As proofs of the risks run he stated that he had held inquests on the bodies of three mortuary keepers.

Medical Report on Ceylon.

The report of Sir Allan Perry, principal medical officer of Ceylon, which has just been issued, contains an interesting account of the medical condition of the island in 1904. The chief infectious diseases were cholera (7 cases and 4 deaths); smallpox (10 cases and 2 deaths); malaria (5,288 cases and 75 deaths); typhoid fever (341 cases and 70 deaths). Compared with the previous year, malaria was the only disease that showed an increase. The cases of cholera did not originate in the island, but were brought by a steamer. In regard to leprosy, Dr. Rost's "leprolin" serum was used with satisfactory results in three cases. Perhaps the most interesting feature of the report is the fact that Sir Allan Perry, unlike the great majority of colonial physicians, is a follower of Mr. Hutchinson in the belief that parangi or yaws is syphilis. He has instructed his officers to treat the cases more vigorously with antisyphilitic measures. The report of Dr. Aldo Castellani, who it may be remembered discovered the trypanosome of sleeping sickness, is of particular value. He has carried out much bacteriologic work on the island. For dysentery and paradysentery he has prepared a polyvalent vaccine, which is harmless. The blood of an inoculated person agglutinates the *Bacillus dysentericus* of Kruse in from twenty-four to forty-eight hours after inoculation. The immunization passes off in a few weeks. Dr. Castellani has determined the presence of three forms of dysentery. He finds that ipecacuanha has no effect on the amebic variety.

Report of the Antityphoid Inoculation Committee.

The committee appointed by the army council to investigate the value of methods of immunization against typhoid fever has held six meetings since its inauguration a year ago. It consists of Dr. W. Bulloch, Dr. P. Foord Caiger, Dr. James Galloway, Major W. B. Leishman, Dr. Bruce Low, Dr. A. Macfadyen and Prof. A. E. Wright, with Dr. C. J. Martin as chairman. It has now issued an interim report. It finds that antityphoid inoculation in the army has resulted in a substantial reduction in the incidence and death rate from typhoid fever among the inoculated. The statistical records support the scientific observations that the protective substances which are developed after inoculation are identical with those developed during typhoid fever, and that animals can be rendered resistant to typhoid fever by the same method. The committee recommends that the practice of voluntary inoculation against typhoid fever in the army be resumed. It also urges the army council to provide facilities for the following investigations: 1. Investigations with the present form of vaccine (standardized typhoid cultures sterilized by heating to 60 C.) on troops leaving for foreign service, with a view to determining the protective value of varying doses of vaccine, the number of doses to be given, and the duration of the protection conferred. 2. Investigations on animals in order to improve the vaccine if possible. 3. An investigation for the development of protective substances in the blood of patients suffering from and convalescent from typhoid fever. They also suggest the following arrangements: 1. Inoculation under careful supervision at least one month prior to embarkation of volunteers proceeding to India. 2. Attachment of a junior army surgeon to each regiment to proceed abroad and to remain with it for at least three years, acting under the directions of the committee as regards the inoculations and the collection of statistics in connection with them. 3. The collection by the headquarters of the army medical department of statistics relating to inoculations which may be carried out in addition to those mentioned above. The difficulties of the investigations will, it is thought, in the first instance, at least,

necessitate the active supervision of experts who have made a special study of this kind of research. Owing to the laboratories of the Royal Army Medical College being at present incomplete, vaccine must be derived from some other source to be approved by the committee. A minority report is made by Professor Wright and Dr. Bulloch, who, while agreeing with the general recommendations of their colleagues, think that the temporary calling in of experts is not sufficient. They suggest that a quasi-permanent organization is necessary in order that the vaccine and the details of the inoculations may be continually modified in the light of further research.

Pharmacology

Church Papers and Nostrums.

It is a very discreditable fact that in spite of good examples of right doing in the lay as well as in the religious press some church papers still retain their "patent-medicine" advertisements. The service of Mammon is evidently hard to give up. It is still more discreditable when a religious paper even indirectly lends its aid to the nostrum evil in its editorial columns, as appears to be the case with an eastern religious magazine, the *Watchman* of Boston, which tries to show that in case of sickness the alternative of a family of moderate means, owing to the expenses of trained nurses, doctors, etc., is between death, debt and self-administered medicines. It is a libel on the medical profession, which now as in times past, has ever been considerate of the true needs and conditions of its patrons, and it does not speak well for the intelligence of those who would mention self-administered nostrums, even by inference, as a preferable alternative to intelligent treatment in case of serious illness. Few religious papers have gone quite so far as this. The plea is generally made that the advertising department is out of editorial control. This, however, implies a weakness that practically amounts to a vice, and if religious papers can not promote the cause of religion without advertising alcoholic and narcotic-containing and habit-breeding nostrums, they had better go out of the business. It would be a good thing if some more of our profession would follow the example of Dr. Blair of Ohio and supply for the reading matter of these periodicals something in the way of a necessary antidote for their advertising columns. A word fitly spoken might stiffen the backbone of a weak brother in the editorial chair and, possibly, might induce him to apply the antidote himself, even if it had to be sandwiched between advertisements of Dr. Shoop's restorative and Drake's palmetto wine. A religious paper that in practical morals falls behind the best of the lay press is not deserving of Christian patronage.

Societies Take Action.

WESTERN DISTRICT (I. T.) MEDICAL SOCIETY.

At a recent meeting, held at Sapulpa, the following resolutions were adopted:

WHEREAS, The American Medical Association has seen fit to inaugurate a crusade against "patent medicines" and nostrums which will prove invaluable both to the public and to the medical profession; be it

Resolved, That the Western District Medical Society of Indian Territory heartily commends the action of the American Medical Association and wishes them success in this undertaking, and

Resolved, That this society proffers the services of this body and each individual in this valuable work.

ERIE COUNTY (PA.) MEDICAL SOCIETY.

At its last meeting this society expressed its approval of the efforts of the Council on Pharmacy and Chemistry of the American Medical Society and of *Collier's Weekly*, the *Ladies' Home Journal* and others to enlighten the profession and public in regard to the nostrum evil.

LUNA COUNTY (N. M.) MEDICAL SOCIETY.

At a full meeting of this society, with all the practicing physicians in the county present, the following resolution was unanimously adopted:

Resolved, That the opposition to the sale of "patent medicine" nostrums, now being waged against the nostrum venders of the United States by the medical profession and their representative, the American Medical Association, is the right move in the right direction, and is heartily indorsed by the Luna County Medical Society of Luna County, N. M.

MEDICAL AND CHIRURGICAL FACULTY OF THE STATE OF MARYLAND.

The following resolutions were adopted at the annual meeting of this society:

Resolved, That the Medical and Chirurgical Faculty of the State of Maryland expresses its hearty approval of the action of the American Medical Association in establishing a Council on Pharmacy and Chemistry for the investigation of non-official drugs and medical preparations and endorses the plan of action proposed by the Council.

Resolved, That the Medical and Chirurgical Faculty of Maryland desires to record its appreciation of the change which has taken place in the advertising columns of THE JOURNAL of the American Medical Association and to express the hope that this JOURNAL will soon be entirely rid of advertisements that may in any sense be considered questionable. Looking to the accomplishment of such a state of affairs, the faculty hereby instructs its delegates to the American Medical Association to endeavor to induce the House of Delegates of that body to consider favorably the advisability of excluding all medical advertisements from the columns of THE JOURNAL.

OTHER SOCIETIES.

The Norfolk (Va.) Medical Society, at a meeting held May 8, adopted resolutions commending the Council on Pharmacy and Chemistry of the American Medical Association, as well as the *Ladies' Home Journal* and *Collier's Weekly*, for the stand they have taken against nostrums, condemning the advertisement of medicinal agencies in the lay press, denouncing manufacturers who advertise compounds, the formula of which is not given to the medical profession, discountenancing the practice of certain local druggists who advertise the products of such houses, and pledging the members of the society, so far as possible, not to allow their prescriptions to be filled with the products of such houses.

Dr. E. E. Clark, secretary of the Vermillion County (Ill.) Medical Society, reports that at a meeting held May 14, the society unanimously endorsed the action of the American Medical Association in appointing the Council on Pharmacy and Chemistry. The opinion was generally expressed that this was an attempt at a much-needed reform. *Collier's Weekly* and the *Ladies' Home Journal* came in for their share of commendation for the grand work they are doing.

The Camden County District (N. J.) Medical Society, at its annual meeting, adopted resolutions favoring the passage of the Pure Food Bill and the establishment of a department of public health.

Letters of Endorsement.

Dr. E. R. Herring, Shell Lake, Wis., secretary of the Washburn, Sawyer and Burnett Counties Medical Society, writes:

> "I take this opportunity to express the appreciation of the society of the work of the Council on Pharmacy and Chemistry. It is invaluable and can not be too much encouraged."

Dr. P. J. McCourt, New York City, writes:

> "I cordially endorse the general policy of the Association and of its JOURNAL."

Dr. J. Reynolds Brown, Tacoma, Wash., writes regarding the nostrum campaign:

> "I am heartily with you in the crusade."

Dr. John Fassett Edwards, Manila, P. I., writes:

> "Permit me to convey to you my keen approval of the good work you are doing in the battle against 'patent medicines' and their relatives. The struggle is certainly opportune and should not be relinquished until successful."

Dr. Edward P. Stimson, Tiverton, R. I., writes:

> "I am particularly interested in the 'secret' prescription work you are doing. Keep at it. Why should there be a mixture with a secret formula? Only to enrich the pocket of the producer. I can not see the necessity of any proprietary prescriptions any way. I and my pharmacopeia can write for and prepare anything needed in my work. This proprietary business, if there were no unusual profit in it, would soon become a thing of history."

Some Good Advice to Physicians.

Dr. Frank L. Day, president of the Providence Medical Association, in his annual address, published in the *Providence Medical Journal*, said: "We should publicly aid in the movement for the suppression of quack medicines in the interest of public health, as is being done by *Collier's Weekly* and the *Ladies' Home Journal*. And, first of all, we should turn the searchlight on our own prescription books lest recipes for antikamnia, sanmetto, and scores of secret or doubtful nostrums bear our signatures; for it is to be feared that few of us have warded off the lazy, insidious habit of ordering these ready-made preparations."

No Longer Members of the Proprietary Association.

The Fraser Tablet Company, Brooklyn, N. Y., have notified us that the firm is no longer a member of the Proprietary Association of America.

Formulas and Fatuity.

In an editorial with this title the *Druggists' Circular* makes the following pertinent comments regarding self-medication:

Nickle-in-the-slot therapy is a thing of the past, but many people are still living in the past. By this we mean that when a man is sick he can not ascertain the name of his disease and get a sure cure for it by dropping the price into the slot labeled with that name, and pressing on the lever. Many men and women—especially women—among the laity, seem to think that if they find in a book or paper a formula for a remedy for a certain disease, they can take that formula, get some of the medicine, and go forth armed to conquer any case of that particular malady which they come across; in short, that they know what the doctor knows about such cases and can do what he does. Such people, having no appreciation of the limitations of even the correct remedy, when such has been found, are a menace to the health of the community in which they are allowed to roam at large; and the greater the sphere of their activity the greater the menace.

Of course druggists, physicians and others who have studied a little bit about diseases and the means of their cure, know that mere formulas are for the fatuous, and that blind followers of printed directions for combating disease are fools.

In order that remedies may be applied in a more intelligent than a mere hit-or-miss manner, the man who has the remedies prepared and directs their application should be possessed of certain knowledge as to the temperament and surroundings of the patient, the stage to which the disease has arrived, its possible complications, and many other things connected with the case. Often the more he knows about these things the more he is convinced that the kind of remedy needed is one which can not be doled out by the spoonful in capsules. Recently a physician remarked that he had been doing a good deal of study along certain lines lately, and as a result many old troubles which he formerly had not been able to diagnose were now perfectly plain to him, while things about which he had had no doubts, had taken on a different and puzzling aspect.

When those who under the most favorable conditions have made a life study of disease, who are able to examine with an experienced eye the appearance of the patient, to observe his temperature, to inquire as to the food he eats, the water he drinks, the air he breathes, to post himself as to his family history, and to do all the things which doctors do, have to experiment and deliberate before saying just what treatment is required, does it not seem vain for a man who never saw the patient or who would not have known what was the matter with him if he had, to say that a preparation made by a certain formula is what the sufferer needs?

Medicine is a highly specialized science. Some of its votaries make a specialty of surgery, some of therapeutics, some of compounding remedies, and others of various other branches or subdivisions; and the man who can diagnose a case and prescribe for it may not be any more able to fill the prescription properly than the expert dispenser or manufacturing chemist is able to do the physician's part of the work.

The "Patent Medicine" Evil.

In his presidential address before the Nashville Academy of Medicine (*Southern Practitioner*, May), Dr. Lucius E. Burch discussed the "patent medicine" evil. He compared the nostrum evil to a plague which has wrecked homes, though it is supported by many newspapers and has millions backing it. To overcome it, he said it is absolutely necessary to have a united profession. He declared that while this evil is one which indirectly assists the medical profession financially by creating chronic sufferers, the majority of the laity believe that physicians oppose the use of these nostrums because they keep people from seeking medical advice. Dr Burch said that to remedy this state of affairs we must proceed in a sensible way by explaining to patients the dangers of taking drugs which produce unlooked for effects. He referred to the harm done by quack advertisements in the daily press and to the fact that millions are spent in advertising on condition that newspapers print nothing detrimental to the articles advertised. He praised the lay journals and papers which refuse such advertisements, particularly the work of the *Ladies' Home Journal* and *Collier's Weekly* in showing how fraudulent testimonials are obtained and how the business of these firms is carried on. He urged that the society endorse the passage of a law compelling all manufacturers of "patent medicines" to print the ingredients on the label.

Insurance Fees and Lodge Practice

Societies Take Action.

GUADALUPE COUNTY (TEXAS) MEDICAL SOCIETY.

At a recent meeting of this society the following resolutions were adopted:

WHEREAS, The class of examinations required by life insurance companies is of a nature which entails responsibility, and which in justice to the medical profession should not be made for a less fee than $5.00 heretofore allowed, and whereas we charge a similar fee to private patients for examinations of like character, therefore be it

Resolved, That we, the undersigned members of the Guadalupe County Medical Society hereby agree to make no examinations for any life insurance company, or society, for a less fee than $5.00.

Resolved, Further that these resolutions be forwarded to the respective life insurance companies whose accredited examiners we are.

M. B. Grace, A. L. Knolle, O. G. Pearson, Wm. Myers, T. W. Moore, A. M. Stamps, Seguin; J. W. Williams, Staples; J. M. Ehlert, Kingsbury; S. S. Beakley, Seguin; Louis Hirschfeld, E. G. Burgess, Marion; D. A. Watson, Schertz.

The Dauphin County (Ky.) Medical Society, about a year ago, amended its by-laws so that no member could examine applicants for life insurance for less than $5.

ACTION BY PHYSICIANS OF SELMA, ALA.

Dr. Clarence Ritter, Selma, Ala., sends us the following copy of an agreement signed by all the physicians of that city:

We, the undersigned practicing physicians of Selma, Alabama, hereby enter into and bind ourselves to the following agreement, to-wit: That on and after the 15th day of March, 1906, we will not examine applicants for what are known as "old line" insurance companies for less than five dollars ($5.00) for each examination.

T. G. Howard, Clement Ritter, B. B. Rogan, S. Kirkpatrick, Goldsby King, T. E. Lockhart, John T. Chapman, John P. Furniss, Samuel G. Gay, W. W. Harper, James Kenan, McLean Pitts, John N. Furniss, F. G. DuBose, I. C. Skinner, E. B. Ward.

Correspondence

Fraud Advertisements in Religious Journals.

FREDONIA, KAN., May 28, 1906.

To the Editor:—For several years I have been taking the *Christian Standard*, a religious weekly published by the Standard Publishing Co. of Cincinnati. "Patent-medicine" advertisements are scattered profusely throughout both the advertising pages and the reading matter. I have written several letters to the editor, but he has not replied to any of them.

Piso's consumption cure, sure cures for rheumatism, absorbent treatment for eye diseases, etc., are among the many advertisements. Inasmuch as a direct appeal to the publishers has had no effect, and has not even received the courtesy of a reply, and believing that it is not only dishonest but unchristian for any editor of a religious periodical to allow advertisements which are plainly fakes to appear week after week in his paper, I would like to ask every physician in the United States who has any influence with those reading the *Christian Standard* to make such representations as may seem fit and proper. I believe that in this way we can in time cause the editor of the *Standard* to take a little different view of his obligations to his readers.

I am strongly in sympathy with the stand taken by THE JOURNAL of the American Medical Association, and am in favor of ridding our state journals of the objectionable advertising matter. There are some independent journals that are strictly right; for instance, the *Medical World*, which has been one of the foremost of the independents. When I see some little editor attacking the American Medical Association and talking of medical politics, as being merely to promote the interests of those at the head, it makes me think of Landseer's painting "Dignity and Impudence." E. C. DUNCAN.

Marriages

JOHN P. GRIMES, M.D., to Miss Cora Wells Ritchie, both of Chicago.

EDWIN BROWN, M.D., to Miss Aida Stout, both of Philadelphia, May 29.

CARL L. LARSEN, M.D., Buffalo, Minn., to Miss Ruth Cooper of St. Paul, May 31.

COOPER R. DREWRY, M.D., to Miss Mary Tasker James, at Catonsville, Md., June 2.

FRANK M. RIDLEY, M.D., JR., LaGrange, La., to Miss Mabel Hood, at Baltimore, June 6.

ARTHUR R. FLEMING, M.D., Tamaqua, Pa., to Miss Jennie Shelley of Newberry, Pa., June 2.

S. F. RUDOLF, M.D., Ellsworth, Wis., to Miss Mayette M. Casey of Oshkosh, Wis., May 22.

THERON E. QUIMBY, M.D., to Miss Katherine L. Gaffney, both of Syracuse, N. Y., May 22.

WILLIAM J. BAMBER, M.D., Wilson Mills, Mo., to Miss Florence Mathews of Salem, Mo., May 17.

ERNEST L. GATES, M.D., Kirkmansville, Ky., to Miss Fannie Bell Carter of Herndon, Ky., May 16.

ANDREW ALLISON O'DANIEL, M.D., to Miss Ethel I. Bower Goodwin, both of Philadelphia, June 4.

JOHN G. POINDEXTER, M.D., Bridgeport, Texas, to ANNIE E. LYNCH, M.D., of Terrell, Texas, May 29.

WILLIAM LAUNCELOT BROWN, M.D., to Miss Katherine Anna Murphy, both of El Paso, Texas, June 2.

EDWARD W. PERKINS, M.D., JR., Reams, Va., to Miss Nolis Perkins of Dinwiddie County, Va., May 23.

FRANK T. BRIGHAM, M.D., Two Harbors, Minn., to Miss Katherine Thompson of Duluth, Minn., in April.

EDWARD CORNELIUS CARTLEDGE, M.D., Atlanta, Ga., to Miss Mary Meredith Rounsaville of Rome, Ga., June 6.

BENJAMIN VAN DOREN HEDGES, M.D., Plainfield, N. J., to Miss Adele Cutts Williams of Washington, D. C., in Chicago, June 6.

Deaths

Louis A. Weigel, M.D. University of Maryland, School of Medicine, Baltimore, 1875; one of the earliest to employ the Roentgen rays and an acknowledged authority on the subject; president of the American Orthopedic Association; a member of the Medical Society of the State of New York, American Electrotherapeutic Association, Monroe County Medical Society, Rochester Pathological Society and the Rochester Academy of Medicine; orthopedic surgeon to Rochester City and St. Mary's hospitals, and consulting orthopedic surgeon to the Craig Colony for Epileptics, Sonyea; professor of orthopedic surgery in Niagara University, Buffalo; who had been affected with malignant disease supposed to be due to the constant use of the *x*-rays which caused the loss of both of his hands in 1904 after repeated operations, died May 31 from a recurrence of the disease, at his home in Rochester, aged 52.

Cornelius Collins Beard, M.D. Jefferson Medical College; acting assistant surgeon in the Army during the Mexican War, and surgeon on the staff of General Beauregard during the Civil War; one of the founders of the New Orleans School of Medicine in 1856, and professor of anatomy in that institution; some time city physician of New Orleans; a specialist in diseases of the eye and ear, who established wards for the treatment of these diseases in Charity Hospital, New Orleans, died at his home in Brookline, Mass., May 15, from senile dementia, after an illness of three years, aged 78.

Philip H. Barton, M.D. College of Physicians and Surgeons in the City of New York, 1864; a member of the American Medical Association; the oldest practitioner of Danville, Ill.; assistant surgeon on the gunboat *Shamrock* during the Civil War; for many years local surgeon for the Wabash Railway Co., and chief examining surgeon of the pension department under the Cleveland administration, died at his home in Danville, Ill., May 29, from cerebral hemorrhage, after an illness of three weeks, aged 71.

Frederick Farwell Long, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1883, local physician in Chester, Pa., for the Pennsylvania System; a member of the Delaware County Medical Society; medical officer of the Pennsylvania Military College, Chester, and a member of the staff of the Chester Hospital, died at his home in Chester from typhoid fever, May 27, aged 41. At a meeting of the staff of the hospital, held May 29, resolutions of regret and condolence were adopted.

Darwin D. Eads, M.D. Jefferson Medical College, Philadelphia, 1859; a botanist of wide repute, whose contributions to the botanical collection of the Smithsonian Institution, Washington, included almost all the flora of the central states; a practitioner of Paris, Ky., for more than 40 years, and a member of the Mississippi Valley Medical Association, died suddenly at the home of his son in Chicago, May 27, from angina pectoris, aged 70.

Jacob S. Raub, M.D. Long Island College Hospital, Brooklyn, N. Y., 1864; a veteran of the Civil War, in which he served as assistant surgeon and was awarded a medal of honor by congress for gallantry in action; for many years an officer of the National Guard of Pennsylvania, and from 1897 to 1902 chief medical referee of the Pension Bureau, Washington, died suddenly in the Pension Office, May 21, from heart disease, aged 66.

George W. Johnson, M.D. College of Physicians and Surgeons, Chicago, 1895; after his graduation an interne in Cook County Hospital, and for three years a member of the medical staff of the Cook County Institutions, Dunning; a member of the American Medical Association, Illinois State Medical Society and Chicago Medical Society, who was operated on for appendicitis May 31, died at the Augustana Hospital, June 4, aged 45.

Samuel W. Wetmore, M.D. University of Buffalo, Medical Department, 1862; for about 15 years professor of surgery and materia medica in the University of Buffalo; once president of the Erie County Medical Society; surgeon in the Army during the Civil War; for several terms health physician of Buffalo, died at his home in that city, May 28, from cerebral hemorrhage, after an illness of one week, aged 74.

Charles Warrenne Allen, M.D. College of Physicians and Surgeons in the City of New York, 1878, of New York City; for several years a member of the American Medical Association; a member of the New York Dermatological Society and American Dermatological Association; professor of dermatology in the Post-Graduate Medical School, died from typhoid fever in the Colonial Hospital, Gibraltar, May 30, aged 51.

James Winniett Digby, M.D. McGill University, Medical Department, Montreal, 1862; for nearly 40 years a practitioner of Brantford, Ont., acting assistant surgeon in the Army and afterward regimental surgeon of the Sixteenth United States Infantry during the Civil War; councilor and deputy reeve of Brantford, and for three years mayor of that city, died at his home, May 29, suddenly from heart disease, aged 64.

Francis L. Shepard, M.D. University of Buffalo, Medical Department, 1896, of Buffalo, N. Y., was found dead on the tracks of the Erie Railway near Batavia, N. Y., early on the morning of May 26, aged 39. As valuables which he was known to possess were missing, he is supposed to have been murdered and his body placed on the tracks.

N. J. Alexis Mueller, M.D. Chicago Medical College, 1886; vice-president of the Cedar Valley and Dubuque (Ia.) Medical Association; for 17 years chief medical examiner of the Roman Catholic Protective Society of Iowa, died at his home in Dyersville, Iowa, May 23, from cerebral hemorrhage, after an illness of two months, aged 61.

John Denniston, M.D. New York University, New York City, 1867; hospital steward in the Army during the Civil War, and for 39 years a leading practitioner of Seneca County, N. Y.; president of Ovid for two terms and once coroner of Seneca County, died at his home in Ovid, May 24, after an illness of four weeks, aged 62.

Herbert W. Rogers, M.D. Northwestern University Medical School, Chicago, 1903, of Montevideo, Minn., a member of the Minnesota State Medical Society, died May 10 from septic peritonitis, due to abscess following an operation for appendicitis nine months before, in St. Barnabas' Hospital, Minneapolis, aged 27.

Daniel Lee Jewett, M.D. College of Physicians and Surgeons in the City of New York, 1862; a member of the American Medical Association, Illinois State Medical Society and Iroquois County Medical Society; a practitioner of Watseka, Ill., for more than 40 years, died at his home in that place, June 5.

Edwin M. McAffee, M.D. Hahnemann Medical College, Philadelphia, 1855; Philadelphia Medical College, 1855; formerly of Clinton, Iowa, and for several years physician in charge at Mudlavia, Ind., died in a hospital in Chicago, May 27, from osteosarcoma, after an illness of nearly three years, aged 73.

Isaac **M. Neely, M.D.** (Years of Practice, Illinois), 1887; for many years recorder of vital statistics in the office of the clerk of Cook County; formerly a practitioner of Benton and of Du Quoin, Ill.; for eight years postmaster of the latter town, died at his home in Evanston, June 4, aged 80.

Frederick **Preiss, M.D.** Trinity Medical College, Toronto, 1890, of Buffalo, N. Y.; a member of the Medical Union, Buffalo Academy of Medicine, and Erie County Medical Society, died at the Sisters' Hospital in Buffalo, May 30, twelve days after an operation, aged 37.

Houston **T. Guinn, M.D.** Medical Department, University of Texas, Galveston, 1892, a member of the State Medical Association of Texas and of the Leon County Medical Society, died from pneumonia at his home in Roger's Prairie, Texas, February 27.

Elbridge **Meighs Palmer, M.D.** Ohio Medical College, Cincinnati, 1881; Bellevue Hospital Medical College, New York City, 1882, died at his home in Warren, Ind., May 18, from rheumatism and dropsy, after an illness of nearly nine years, aged 51.

Jacques **J. Trudell, M.D.** University of Vermont, Medical Department, Burlington, 1886, a member of the Rutland County Medical Association, died at his home in Rutland, Vt., May 18, from tuberculosis, after an illness of seven months, aged 43.

Albert **H. Wilton, M.D.** Detroit (Mich.) College of Medicine, 1900, contract surgeon United States Army, formerly of Flat Rock, Mich., on duty at the Army Medical School, Washington, D. C., died in that city recently, and was buried May 26.

George **N. Swartz, M.D.** Bellevue Hospital Medical College, New York City, 1875, president of the Northampton County (Pa.) Medical Society, died May 23 at his home in Pen Argyl, Pa., from pneumonia, after a short illness, aged 55.

Elijah **Carroll Dycus, M.D.** 1843; the pioneer practitioner of Jackson Purchase, Ky.; a member of the Marshall County Medical Society, died at his home in Benton, Ky., March 5, from uremia, after an illness of one day, aged 86.

Smith **Dayton Steer, M.D.** Cleveland, 1856, for many years a practitioner of Burton, Ohio, and surgeon in the Army during the Civil War, died suddenly at his home in Tacoma, Wash., from heart disease, April 20, aged 79.

Edwin **W. Thomas, M.D.** Medical Department, Arkansas University, Little Rock, 1880, of Booneville, Ark., died in Magazine, Ark., May 28, from the effects of an overdose of morphin, taken with suicidal intent.

Spencer **P. Irvin, M.D.** Department of Medicine of the University of Pennsylvania, Philadelphia, 1900, of Philadelphia, died in the hospital of the University of Pennsylvania, from typhoid fever, May 30, aged 27.

B. **J. Miles, M.D.** Memphis Hospital Medical College, 1892, a member of the State Medical Association of Texas and of the Hunt County Medical Society, died at his home in Merit, Texas, Dec. 26, 1905, aged 42.

John **R. Maxwell, M.D.** Keokuk (Iowa) Medical College, 1896, lecturer on diseases of the rectum and assistant to the chair of surgery in his alma mater, died at his home in Keokuk, June 4, from nephritis.

Homer **Summerville Quinn, M.D.** (Examination, Ohio), once a representative from Madison County in the legislature, died at his home in West Jefferson, Ohio, May 17, after an illness of seven months, aged 69.

Joseph **Ambrose Dean, M.D.** Baltimore University, School of Medicine, 1901, died at his home in New York City, May 14, from endocarditis following septicemia, after an illness of seven weeks, aged 31.

Zelman **E. Scott, M.D.** Vanderbilt University Medical Department, Nashville, Tenn., 1900, of Barren Plains, Tenn., died at the home of his sister in Springfield, Tenn., May 22, after a long illness, aged 29.

John **W. Frost, M.D.** Howard University, Medical Department, Washington, D. C., died at his home in Washington, May 17, from the effects of carbolic acid accidentally administered, aged 50.

H. **C. Spears, M.D.** Transylvania University, Medical Department, Lexington, Ky., 1850, for many years a practitioner of Taylor, Texas, died at his home near Hillsboro, Texas, May 18, aged 78.

Amelia **A. Dolson, M.D.** (Examination, New York), for many years a practitioner of Buffalo, died in Rome, N. Y., April 25, from pneumonia, after an illness of two days, aged 74.

David **Ernest Sedgwick, M.D.** Rush Medical College, Chicago, 1877, formerly a member of the Wisconsin legislature, died at his home in York, Neb., May 17, from heart disease, aged 55.

Henry Clay Black, M.D. 1850, a member of the Stillwater Medical Association, died at his home in Freeport, Ohio, April 25, from vesical hemorrhage, after an illness of 16 days, aged 80.

Jesse B. Stone, M.D. Bellevue Hospital Medical College, New York City, 1890, of New York City, died suddenly at the home of his parents in Wichita, Kan., from uremia, May 23, aged 39.

Hugh A. McFatrich, M.D. Eclectic Medical Institute, Cincinnati, 1852, for 30 years a practitioner of Red Oak, Iowa, died recently at the home of his daughter in Denver, Colo., aged 82.

Fritz Mechtold, M.D. New York University, New York City, 1881, an inspector of the New York health department, died at his home in Stapleton, Staten Island, May 19, aged 54.

Jacob Hoke, M.D. Chicago Medical College, 1869, one of the oldest medical practitioners in Illinois, died at his home in Cordova, May 28, from senile debility, aged 90.

Leander Snyder, M.D. Cincinnati Medical College, 1848, died at his home in Lafayette, Ind., May 20, from cerebral hemorrhage, after an illness of ten days, aged 79.

W. Updyke Selover, M.D. New York University, New York City, 1864, in 1888 mayor of Rahway, N. J., died at his home in Newark, N. J., May 21, aged 64.

T. M. Goldsberry, M.D. Kansas City (Mo.) Medical College, 1880, of Viola, Kan., died from tuberculosis in San Antonio, Texas, May 18, after a long illness.

Isaac G. Wheeler, M.D. Albany (N. Y.) Medical College, 1874, died at his home in Buffalo, N. Y., May 22, after an illness of one week, aged 74.

James A. Knight, M.D. Atlanta (Ga.) Medical College, died at his home in Eatonton, Ga., from nephritis, after a prolonged illness, May 19.

C. W. Miller, M.D. Missouri Medical College, St. Louis, 1877, formerly of Doniphan and Toledo, Mo., died at Excelsior Springs, Mo., May 17.

Albert Toepfer, M.D. Göttingen, 1873, died at his home in Jersey City, May 18, from angina pectoris, after an illness of six weeks, aged 57.

Claude R. Norton, M.D. New York Homeopathic Medical College and Hospital, 1872, died at his home in Philadelphia, May 31.

John F. Edwards, M.D. New York University, New York City, 1848, died at his home in Raritan, N. J., May 23 aged 87.

George Given, M.D. Marion-Sims College of Medicine, St. Louis, 1892, died at his home in Mexico, Mo., May 14.

James Mosgrove, M.D. Medical College of Ohio, Cincinnati, 1846, died recently at his home in Havana, Ohio.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

METHOD OF DETERMINING THE OPSONIC INDEX.

COLORADO, TEX., May 23, 1906.

To the Editor:—Please tell me where I can ascertain the method of determining the opsonic index after Wright.

THEODORE MERRILL.

ANSWER.—The method of obtaining the opsonic index is briefly as follows: A certain amount of the serum of the patient whose index we wish to determine is mixed with, let us say, the same amount of a suspension of blood corpuscles, washed three or four times in physiologic salt solution in order to remove all traces of plasma or serum, and to this mixture is added a small quantity of a homogeneous suspension in salt solution of the particular bacterium on which we wish to test the opsonic power. The mixtures for the control tests are made exactly in the same way except that in one the serum of a normal person is substituted for the serum of the patient, and that in the other serum is replaced by physiologic salt solution. After thorough mixing of the ingredients these mixtures are placed at 37 C. for 30 minutes or so when smears are made and stained and the average number of bacteria taken up by the leucocytes determined by counting the number of bacteria in, say, 40 leucocytes from each mixture and dividing the total number of bacteria obtained in this way in each case by the number of leucocytes counted. The opsonic index is the relation of the number of bacteria taken up by the leucocytes in the mixtures containing

the patient's serum to the number taken up by the leucocytes in the mixtures containing the normal serum.

The following outline may serve to illustrate the foregoing explanations:

Mixtures.	Average phagocytosis (40 leucocytes counted).
1. Serum of tuberculous patient 0.1 c.c. + washed blood 0.1 c.c. + suspension of Tubercle B. 0.1 c.c...	3
2. Serum of normal person 0.1 c.c. + washed blood 0.1 c.c. + suspension of Tubercle B. 0.1 c.c.....	4
3. NaCl solution 0.1 c.c. + washed blood 0.1 c.c. + suspension of Tubercle B. 0.1 c.c.....	0.1

In this case, the opsonic index of the tuberculous patient is .75 (3 ÷ 4 = .75); if the figures are reversed the index will be 1.33 (4 ÷ 3 = 1.33), as compared with 1, the normal index. The result indicated in the third mixture emphasizes the fact that in the absence of serum there is very little phagocytosis. It is necessary in this work to make sure that the corpuscles used have been washed quite free of serum, and this is the reason for the third mixtures.

The blood necessary for these tests is obtained easily from the lobe of the ear, a few drops being collected in a small *u*-shaped tube that is centrifugated in order to free the corpuscles from the plasma which is withdrawn with a fine pipette. The corpuscles can now be washed in salt solution. In order to prevent all clotting a small amount of citrate solution may be mixed with the blood, but this is really not essential. The point is that the various mixtures be so made that the results are comparable. The mixing may be done in small pipettes marked so that the same quantity of the various ingredients may be drawn in. After mixing thoroughly by drawing the fluids in and out, the pipette with contents is placed in the incubator.

It is quite impossible to describe fully all the details. The only way to learn all about them is by practical work in the laboratory. Thus the preparation of uniform suspensions of tubercle bacilli, for instance, requires special methods which are described by Wright (*Lancet*, 1904, vol. ii, p. 1138). In the case of other bacteria the main points are to secure uniform suspensions of proper density. If too many bacteria are present the leucocytes may be so crowded with bacteria that the latter can not be counted with accuracy. As to staining methods, Leischmann's method or some modification, e. g., Wright's, answers very well for ordinary bacteria. In the case of mixtures containing tubercle bacilli carbolfuchsin followed by acid and methylene blue gives serviceable pictures. The whole literature on phagocytosis and opsonins is discussed by Hektoen in THE JOURNAL for May 12, 1906, and those who wish to learn more about the actual technical details should read particularly the earlier articles by Wright and Douglas and by Leishmann referred to in Hektoen's article.

PREVENTION OF MOSQUITO BITES.

MELLEN, WIS., May 24, 1906.

To the Editor:—Will you please send me a formula for a solution to use on the face and hands to keep mosquitoes and flies away. They are very troublesome here and I can not find anything to help me.

ANSWER.—Oleum hedloma (American pennyroyal) is a very good remedy applied locally to the hands and face.

State Boards of Registration

COMING EXAMINATIONS.

MICHIGAN State Board of Registration in Medicine, Ann Arbor, June 12. Secretary, B. D. Harison, Sault Ste Marie.

SOUTH CAROLINA State Board of Medical Examiners, Columbia, June 12. Secretary, W. M. Lester, Columbia.

TEXAS State Board of Medical Examiners, Dallas, June 12. Secretary, T. T. Jackson, San Antonio.

OHIO State Board of Medical Registration and Examination, Cincinnati, Cleveland and Columbus, June 12-14. Secretary, George H. Matson, Columbus.

BOARD representing the Medical Society of Delaware and Board representing the Homeopathic Medical Society of Delaware State and Peninsula, former held at Dover, and latter at Washington, June 19. Secretary, P. W. Tomlinson, Wilmington.

NEW JERSEY State Board of Medical Examiners, Trenton, June 19-20. Secretary, E. L. B. Godfrey, Camden.

NEW YORK Boards of Medical Examiners, Albany, June 19-22. Secretary, Charles F. Wheelock, Albany.

PENNSYLVANIA State Board of Medical Examiners, Annex Hotel, Pittsburg, and North Building, Philadelphia, June 19-22. Secretary, Joseph E. Willetts, Pittsburg.

VIRGINIA State Board of Medical Examiners, Richmond, June 19-22. Secretary, R. S. Martin, Stuart.

MARYLAND Board of Medical Examiners, Baltimore, June 20-23. Secretary, J. McP. Scott, Hagerstown.

Arkansas April Report.—Dr. J. P. Runyan, secretary of the State Medical Board of the Arkansas Medical Society, reports the written examination held at Little Rock, April 10, 1906. The number of subjects examined in was 7; total number of questions asked, 52; percentage required to pass, 75. The total number of candidates examined was 96, of whom 66 passed, including 48 non-graduates, and 30 failed, including 28 non-graduates. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Memphis Hospital Med. Coll.,	(1885)	75; (1892) 75; (1896) 75
Louisville Med. Coll.	(1874)	75
Keokuk Med. Coll.	(1876)	75
Baltimore University	(1905)	87
Vanderbilt University	(1901)	77
Barnes Med. Coll.	(1895)	75
University of Arkansas	(1906)	75, 76, 82 86
Bellevue Hospital Med Coll.	(1896)	75
University of Tennessee	(1884)	75
University of Louisville	(1896)	75
Northwestern University	(1890)	75
University of Virginia	(1901)	92
Hannibal Med. Coll., Memphis, Tenn.	(1895)	75

Non-graduates, the grade of 75 was reached by eleven, 76 and 77 by four each, 78 by two, 80 by seven, 81 and 82 by two each, 83 by three, 84 by two, 85 by four, 86 by one, 87 by three, 88, 89 and 92 by one each.

FAILED.

University of Louisville	(1875)*	
University of West Tennessee	(1906)	38

* Failed on account of sickness.

Non-graduates, the grade of 48 was reached by one, 51 by two, 57, 58, 59, 61 and 63 by one each, 64, 65, 66 and 67 by two each, 68 by one, 71 by two, 72 and 73 by two each, and 74 by one. In two cases no grade was given.

The following questions were asked:

ANATOMY.

1. At what time in the development of the fetus is the hair formed. 2. Describe a red blood corpuscle. 3. Describe the ulna. 4. Name the peculiar ribs. 5. Describe the deltoid muscle. 6. Name nerve supply of the stomach. 7. Bound Scarpa's triangle. 8. Name the lobes of the liver. 9. Name the glands of the alimentary tract. 10. Name the muscles of the eyeball.

SURGERY.

1. Describe fully the symptoms of acute suppurative appendicitis and give the treatment. 2. Describe a gastroenterostomy and name the indications for the operation. 3. Describe a Colle's fracture and give the treatment. 4. Define cholecystitis and describe the surgical treatment. 5. Describe the operation of trephining and give some of the indications for the operation. 6. Give general rules governing the treatment of gunshot wounds of the abdomen. 7. What are hemorrhoids? Give their cause, classification, diagnosis and surgical treatment. 8. In a case of anuria, how would you determine whether due to suppression or retention? Name the causes of retention of urine and give treatment.

MATERIA MEDICA AND THERAPEUTICS.

1. What is the difference between empirical and rational therapeutics? 2. Name four ways by which medicine may be introduced into the circulation. 3. Name four classes of medicine and give example of each class. Give dose of each example. 4. In what manner do emetics act? Name two vegetable and two mineral emetics. 5. From what is salicin derived? Give first dose and physiologic effect. 6. What precaution would you use in the administration of chloroform? 7. Give physiologic effect of opium and treatment of opium poisoning. 8. Strychnia poisoning is similar to what disease? How would you distinguish them? 9. Give indications for the use of aconite in the early stage of pneumonia. 10. Write a complete prescription for a brisk cathartic containing not less than three ingredients.

PHYSIOLOGY.

1. Give location, size, capacity and function of the stomach. 2. Describe the mechanism of gastric secretion. Give composition of gastric juice. 3. Describe the mechanism of absorption. 4. What is meant by internal secretion? 5. (a) Describe in detail, the medulla oblongata and give its function. (b) Name some of the special nerve centers located there.

PRACTICE OF MEDICINE.

1. What is the one characteristic physical sign of pneumonia? When heard? 2. Give treatment of specific urethritis. 3. What is the clinical significance of the constant appearance in the urine of albumin? Of sugar? 4. Give diagnosis and treatment of pleuritic effusion. 5. Differentiate between cerebral anemia and hyperemia and give treatment for each condition. 6. Give diagnosis and treatment of malarial hematuria.

CHEMISTRY.

1. What is meant by specific gravity? 2. What liquid is used as the standard by which the specific gravity of another liquid is tested? 3. Give chemical composition of human urine. 4. Give specific gravity (approximately) of normal healthy urine. 5. Is urine acid or alkaline? 6. What is urea? 7. Give test for albumin in urine. 8. Give test for sugar in urine.

OBSTETRICS.

1. How does the peritoneum cover the uterus? What and where are the ovaries? 2. What is the danger of incomplete abortion? Give treatment of same. 3. What are the indications for the use of the forceps? Would you tie the cord before or after the child cries. Why? 4. Define cephalhematoma; caput succedaneum and explain difference. 5. What is treatment of septic infection of the breast.

Arkansas Eclectic April Report.—Dr. J. L. Vail, secretary of the Eclectic State Medical Board, reports the written examination held at Little Rock, April 9-10, 1906. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. Two candidates were examined, one of whom was a graduate of Bennett Medical College, Chicago, 1883, and the other an undergraduate.

Georgia April Report.—Dr. E. R. Anthony, secretary of the Regular Board of Medical Examiners of Georgia, reports the written examination held at Augusta, April 3-4, 1906. The number of subjects examined in was 10; total number of questions asked, 50; percentage required to pass, 75. The total number of candidates examined was 39, all of whom passed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
University of Georgia, (1903) 88; (1906) the grades of 78 and 79 were reached by one each, 80 was reached by two, 81 by three, 82 by two, 83 by seven, 84 by one, 85 by three, 86 and 87 by two each, and 88 by four.		
Howard University	(1905)	83, 86
Maryland Med. Coll., (1904) 78, 81; (1905) 83, 85, 85, 85; (1906) 75.		
Chattanooga Med. Coll.	(1903)	79

The following questions were asked at the examination held at Augusta, April 3-4:

PHYSIOLOGY.

1. Describe a white blood corpuscle. Where are they formed? What is their function and what is their ultimate end? 2. The salivary secretion is derived from what three glands? What is the physiological action of saliva? 3. What are the three motions of the heart and their cause? 4. What is the volume of air taken in the body in an ordinary inspiration? How is this chemically represented, and how much of the O is absorbed? 5. What is the result of a lesion of the spinal cord in the cervical region? In the sacral region?

PATHOLOGY.

1. Mention the pyogenic bacteria. 2. Describe the blood changes in pernicious anemia. 3. Give the structural changes which take place in chronic and acute appendicitis. 4. Differentiate between a typhoid ulcer and a tuberculous ulcer of the intestines. 5. Describe the process of repair.

GYNECOLOGY.

1. Define menorrhagia and metrorrhagia. (a) Give causes and treatment. 2. Describe an operation for the repair of a lacerated cervix. 3. Give symptoms of carcinoma of the uterus. (a) Treatment. 4. Define retroversion and retroflexion of the uterus. (a) Symptoms and treatment. 5. Give symptoms and treatment of ectopic gestation.

PRACTICE.

1. Define lobar pneumonia. (a) Give symptoms and treatment. 2. Define malaria. (a) Give prophylactic and medical treatment. 3. Differentiate between chicken pox and smallpox. 4. Define measles; point out the most dangerous complications. 5. Differentiate true croup and spasmodic.

OBSTETRICS AND DISEASES OF CHILDREN.

1. Give symptoms, causes and treatment, of acute mastitis? 2. Give principal causes and treatment of rupture of uterus. 3. Treatment of inertia uteri. 4. Differentiate between diphtheria and the disease with which it might be confounded. 5. Give treatment of bronchopneumonia.

CHEMISTRY.

1. Give the formula of each of five compounds, giving the name in each case and the dose. 2. Give the name and formula of Epsom salt, Glauber salt and Rochelle salt. 3. Mention five mineral poisons and give the antidote for one of them. 4. Name the non-metallic chemical elements, which in various combinations are found in the tissues of the body. 5. How may you decide whether a urinary deposit is urates or phosphates?

ANATOMY.

1. Describe the inferior maxillary bone. 2. Name muscles of posterior tibeo-fibula group, superficial and deep. (a) Give origin and insertion of (1) Pectoralis major; (2) External oblique; (3) Sartorius; (4) Triceps muscles. 3. Give course, relations and branches of external carotid artery. (a) Give blood supply of rectum. 4. Give origin, course and distribution of great sciatic nerve. (a) Give nerve supply of heart. 5. Describe the stomach.

SURGERY.

1. Give treatment, constitutional and local, of burns. 2. Name the varieties of fractures. (a) State the cardinal principles in the treatment of fractures. 3. Describe an operation for the radical cure of oblique inguinal hernia. 4. Define hemorrhoids. (a) Give varieties and treatment. 5. Define a chancre. (a) State period of primary and secondary incubation. (b) Treatment, local and constitutional.

MATERIA MEDICA AND THERAPEUTICS.

1. Source of ergot; define its use in obstetrics. 2. Name four preparations of mercury; give dose of each. 3. Source of quinin; for what is it a specific? 4. What is meant by hemostatics? Describe their mode of action; name several of them. 5. Write a prescription for a general tonic with tincture nux vomica and a preparation of arsenic.

OBSTETRICS AND DISEASES OF CHILDREN.

1. How would you manage a shoulder presentation? 2. Differentiate between a five months' pregnancy ovarian-cystoma-ascites and uterine fibroid. 3. What is the Braxton-Hick's sign of pregnancy? How obtained? 4. Under what condition would you be justified in inducing premature labor? 5. What direction would you give the nurse as to care of infant during first week?

The following questions were asked at the examination held at Atlanta, April 5-6:

PHYSIOLOGY.

1. Describe a red blood corpuscle. How are they formed? Give function and relative number to the white corpuscles. 2. What effect has pancreatic juice on proteids? On carbohydrates? On fats? 3. What is the heart's size, weight and capacity per beat? How much force does it put out at each systole? 4. What quantity of air per hour is necessary for health? What proportion of CO_2 in the air would make it dangerous? 5. What effect has section of the anterolateral columns of the spinal cord? Of the posterior columns?

PATHOLOGY.

1. Define pathology. 2. What steps are necessary in preparing a pathologic specimen for microscopic examination? 3. Give steps in examination of blood to determine the presence of malarial parasite. 4. Describe the pathologic changes in liver produced by cirrhosis (interstitial hepatitis). 5. Differentiate between fatty degeneration and fatty infiltration. 6. Give diagnostic points relative to carcinoma. 7. Describe changes in the tissue produced by tuberculous infection. (Answer five of these questions.)

GYNECOLOGY.

1. Describe the ligaments of the uterus. 2. Describe the blood supply of the uterus and ovaries. 3. Give symptoms and treatment of fibroid tumors of the uterus. 4. Describe an operation for the repair of a complete laceration of the perineum. 5. Describe an operation for the removal of the uterus through the vagina.

PRACTICE.

1. Gallstones; their origin, symptoms and treatment. 2. Etiology and treatment of rickets. 3. Define scarlet fever; outline method of handling same. 4. Enterocolitis; etiology and treatment. 5. Typhoid fever; general prevalence and modes of conveyance.

OBSTETRICS AND DISEASES OF CHILDREN.

1. What symptoms would make you positive of the diagnosis of pregnancy at three months? 2. Diagnosis and treatment of fetal death in utero. 3. Give treatment of prolapse of cord. 4. Differentiate between ileocolitis and cholera infantum. 5. Give early symptoms and usual courses of hip-joint disease.

CHEMISTRY.

1. Give the symbol, valence and a principal compound of each of five chemical elements. 2. Give the chemical name and formula of sugar of lead, blue stone, copperas. 3. Mention five vegetable poisons and give the antidote for one of them. 4. What metallic chemical elements are found in various combinations in the body? 5. How much urea is voided by a healthy adult in 24 hours? How may the amount be determined?

ANATOMY.

1. Describe the humerus. 2. Name the muscles of anterior radio-ulna group. (a) Give origin and insertion of following muscles: (1) Biceps, (2) gastrocnemius, (3) supinator longus, (4) tibialis anticus. 3. Give course, relations and branches of the common femoral artery. (a) Describe the "Circle of Willis." 4. Give origin and distribution of the pneumogastric (vagus) nerve. (a) What nerve supplies the diaphragm. 5. Give relations of the liver; name lobes of liver.

SURGERY.

1. Define fistula in ano. (a) State varieties. (b) Treatment. 2. How would you differentiate between concussion and compression of the brain? 3. Give rules for governing you in trephining. (a) Describe the operation. 4. Describe an operation for removing stones from the male bladder. (a) Give your preference and state reasons.

MATERIA MEDICA AND THERAPEUTICS.

1. Source of strychnin; dose, therapeutic indication. 2. What is Fowler's solution; dose of same. 3. Give chief alkaloids of opium, belladonna, hyoscyamus, stramonium; give dose of each. 4. Give symptoms of acute and chronic lead poisoning; treatment. 5. Name the chief heart depressants and their indications.

OBSTETRICS AND DISEASES OF CHILDREN.

1. Diagnose breech presentation. What are the dangers to the mother and child? Give treatment. 2. Give presumptive, probable, positive signs of extrauterine pregnancy. 3. What is Hegar's sign? 4. Discuss nephritis as a complication of pregnancy. 5. What is the average length and weight of a full term fetus?

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending June 2, 1906:

Duncan, Louis C., asst.-surgeon, granted fifteen days' leave of absence.

Whitmore, E. R., asst.-surgeon, order of relief from duty at Fort Jay, N. Y., and assignment to duty at Fort Warren, Mass., is revoked.

Grissinger, Jay W., asst.-surgeon, relieved from duty at Fort Jay, N. Y., and ordered to Fort Warren, Mass., for duty.

Ekwurzel, Geo. M., asst.-surgeon, ordered to proceed from West Point, N. Y., to Army General Hospital, Washington Barracks, D. C., for temporary duty.

Crosby, Wm. D., surgeon, granted fourteen days' leave of absence.

Duval, Douglas F., asst.-surgeon, leave of absence extended twenty days.

Wells, Francis M., contract surgeon, ordered, on arrival at Fort Niagara, N. Y., to Fort Robinson, Neb., for duty. Granted leave of absence for ten days.

Ware, William H., dental surgeon, returned to Fort Wingate, N. M., from leave of absence.

Halliday, Francis A., contract surgeon, granted leave of absence for fifteen days.

Slater, Ernest F., contract surgeon, returned to Fort Hancock, N. J., from temporary duty at Fort Hamilton, N. Y.

Adair, George F., contract surgeon, returned to Fort Wadsworth, N. Y., from temporary duty at Madison Barracks, N. Y.

Williamson, J. William, contract surgeon, granted leave of absence for ten days.

Campbell, George F., contract surgeon, ordered from Wheatland, Wyo., to Philippine service.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending June 2, 1906:

Iden, J. H., P. A. surgeon, detached from the Naval Hospital, Newport, R. I., and ordered to the *Columbia*.

Brown, E. M., P. A. surgeon, detached from the Naval Hospital, New York, N. Y., and ordered to duty in the department of government and sanitation, Ancon, Panama.

Simons, M. H., medical director, detached from duty in command of the Naval Hospital, Mare Island, Cal., and ordered to duty in command of the Naval Hospital, Philadelphia, Pa.

Persons, R. C., medical director, detached from duty in command of the Naval Hospital, Norfolk, Va., and ordered to duty in command of the Naval Hospital, Mare Island, Cal.

Kindleberger, C. P., surgeon, detached from the *Independence* and ordered to the Asiatic station.

Farenholt, A., surgeon, ordered to the *Independence*.

Lee, A. E., asst.-surgeon, appointed assistant surgeon, with rank of lieutenant junior grade, from May 9, 1906.

Dollard, H. L., surgeon, appointed acting assistant surgeon, from May 26, 1906.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending May 30, 1906:

Blue, Rupert, P. A. surgeon, relieved from special temporary duty in San Francisco, Cal., and directed to proceed to Washington, reporting at Bureau.

Amesse, J. W., P. A. surgeon, directed to proceed to Stapleton, N. Y., for special temporary duty, on completion of which to rejoin station at Ellis Island, N. Y.

Lloyd, B. J., P. A. surgeon, leave of absence granted for fifteen days, from May 1, 1906, revoked.

Lloyd, B. J., P. A. surgeon, relieved from duty at Guayaquil, Ecuador, and directed to proceed to Fort Stanton, N. M., for duty and assignment to quarters; order revoked.

Ebert, H. C., asst.-surgeon, relieved from duty at Seattle, Wash., and assigned to duty on the U. S. Revenue Cutter *Perry*.

Pettyjohn, Joseph, asst.-surgeon, assigned to duty on the U. S. Revenue Cutter *Thetis*.

Frost, W. H., asst.-surgeon, relieved from duty at Baltimore, Md., and assigned to duty on the U. S. practice ship *Chase*.

Kennedy, S. R. M., acting asst.-surgeon, granted leave of absence for four days, from May 27, 1906.

Rice, W. E., acting asst.-surgeon, granted leave of absence for five days, from June 2, 1906.

Watters, M. H., pharmacist, relieved from temporary duty in San Francisco, Cal., and directed to rejoin station in Chicago.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended, June 2, 1906:

SMALLPOX—UNITED STATES.

California: Los Angeles, May 12-19, 6 cases.
Colorado: General, April 1-30, 10 cases.
Florida: General, May 19-26, 2 cases.
Illinois: Galesburg, May 19-26, 1 case.
Kentucky: Covington, May 19-26, 1 case.
Louisiana: New Orleans, May 12-19, 5 cases, 1 death.
Massachusetts: Boston, May 19-26, 2 cases; Quincy, 2 cases.
Mississippi: Natchez, May 12-19, 1 case, imported.
Missouri: St. Louis, May 19-26, 4 cases.
New York: New York, May 19-26, 2 cases.
Ohio: Cincinnati, May 18-25, 10 cases.
Oklahoma: Oklahoma City, May 12-26, 13 cases.
Pennsylvania: Altoona, May 19-26, 1 case, imported; Lancaster, 2 cases, 1 death; Pittsburg, May 12-19, 2 cases.
Tennessee: Knoxville, May 19-26, 1 death.
Utah: General, April 1-30, 76 cases.
Virginia: Petersburg, May 19-26, 1 case.
Wisconsin: Appleton, May 19-26, 4 cases; Marinette, May 12-26, 4 cases; Milwaukee, May 19-26, 1 case.

SMALLPOX—FOREIGN.

Africa: Cape Town, April 14-21, 5 cases.
Australia: Brisbane, March 31-April 7, 1 case; Fremantle, March 24-31, 3 cases, 1 death; Perth, March 24-31, 1 case.
Austria: Freudenthal, April 14-21, 2 cases; Gallicia, April 8-14, 7 cases; Voralberg, April 14-21, 2 cases.
Chile: Antofagasta, March 1-31, 23 deaths; Iquique, April 22-29, 3 cases.
Gibraltar: April 29-May 6, 2 cases.
Great Britain: Bristol, May 5-12, 2 cases; Newcastle-on-Tyne, 2 cases.
Greece: Athens, May 6-13, 1 death; Patras, April 10-17, 4 cases, 1 death.
India: Calcutta, April 13-20, 174 deaths; Karachi, April 22-29, 20 cases, 15 deaths; Madras, April 21-27, 31 deaths; Rangoon, April 14-21, 41 deaths.
Italy: General, May 3-10, 39 cases.
The Netherlands: Rotterdam, May 5-19, 3 cases.
Russia: Moscow, April 21-May 5, 25 cases, 8 deaths; Odessa, April 29-May 12, 46 cases, 6 deaths; St. Petersburg, April 21-28, 7 cases, 1 death.
Spain: Barcelona, May 1-10, 11 deaths; Seville, April 1-30, 34 deaths.

YELLOW FEVER.

Mexico: Merida, May 6-12, 3 cases, 2 deaths.

CHOLERA—FOREIGN.

India: Calcutta, April 14-21, 86 deaths; Rangoon, 1 death.

PLAGUE—INSULAR.

Hawaii: Honolulu, May 24, 1 death.

PLAGUE—FOREIGN.

India: Calcutta, April 14-21, 207 deaths; Karachi, April 22-29, 307 cases, 246 deaths; Rangoon, April 14-21, 65 deaths.
Peru: Lima, April 23-30, 3 cases, 1 death; Trujillo, 4 cases, 1 death; Mansefu, 1 case.
Straits Settlements: Wellesley Province, April 18, present.

Society Proceedings

COMING MEETINGS.

American Medico-Psychological Society, Boston, June 12-15.
Massachusetts Medical Society, Boston, June 12-15.
Maine Medical Association, Portland, June 13-15.
Minnesota State Medical Association, Minneapolis, June 20.
West Virginia State Medical Assn., Webster Springe, June 20-22.
Medical Society of New Jersey, Atlantic City, June 19-21.
State Medical Society of Wisconsin, Milwaukee, June 27-29.
American Ophthalmological Society, New York City, June 28-29.

ILLINOIS STATE MEDICAL SOCIETY.

Fifty-sixth Annual Meeting, held at Springfield, May 15-17, 1906, under the Presidency of Dr. H. C. Mitchell of Carbondale.

Duties and Obligations Relating to Tuberculosis.

DR. C. W. LILLIE, East St. Louis, dealt with what may be termed the ethical aspects of this subject—the duties of parents and guardians; of teachers in our common schools; of employers of labor of all kinds; of city and county officials, and boards of health and overseers of the poor; of legislators, governors and others whose duty it is to promote the passage of laws for the preservation of public health; of charitable persons in each community; of philanthropic and wealthy citizens; of managers of steam and street railways; of hotel proprietors; of the individual in his personal habits; of all doctors, and especially members of state, county and city medical societies, and more particularly the doctor's duty to make sure of his diagnosis. Lastly, he pointed out the duty of the physician in instructing all others in regard to tuberculosis.

Etiology and Diagnosis of Tubercular Spondylitis in Infancy and Childhood.

DR. J. H. HESS, Chicago, reported two interesting cases, and emphasized the great importance of early *x*-ray examinations in these cases, which was illustrated in Case 1, where the degree of destruction, though only moderate, could be localized beyond a doubt; also the common danger of misinterpreting the reflected pains as local diseases in the parts affected, as illustrated by conclusions in both of the cases reported.

Hysteria in Children.

DR. D'ORSAY HECHT, Chicago, said that this subject merits the attention of the general practitioner and specialist in pediatrics and neurology. Inquiry into hysteria in children has not been a searching one. The general belief is that hysteria is a malady of adult life. He spoke of the physical and mental factors conducive to the development of hysteria in children, and cited several illustrative cases. The diagnosis was discussed with special reference to the exclusion of organic disease, the recognition of organic disease complicated by hysteria, and the detection of simulation. The prognosis and treatment were likewise discussed briefly.

Manifestations of Rheumatic Infection in Children.

DR. C. MARTIN WOOD, Decatur, pointed out the difference between adults and children in their reaction to rheumatic infection, and said that there is more extensive and lasting damage in the latter. He spoke of tonsillitis, endocarditis, arthritis, chorea and erythemas as rheumatic manifestations. He emphasized the importance of recognizing both mild and obscure cases. He said there is a marked tendency on the part

of some children to frequent outbreaks in one family or another. This is due to a lessened resistance, either hereditary or acquired. The protection of the heart and the prevention of fresh attacks should be the main object of treatment. The former is secured by rest and counteracting of poisons, while the latter is obtained by hygienic management, especially of clothing, exercise and bathing.

The Attitude of the Physician Toward the Nostrum Evil.

DR. CHARLES SPENCER WILLIAMSON, Chicago, said that a very small part of the knowledge and energy which every physician is constantly giving to his work would, if applied to the eradication of the nostrum evil, do away with it in a very short time. Already there are signs of improvement. In another city where the nostrum evil had reached a year or so ago even a worse stage than in Chicago, he finds from the last 200 prescriptions taken consecutively but 21 calling for proprietaries. This number is, of course, still many, many times in excess of the justifiable proportion, and yet it shows the diminution to one-half or one-third of what should be readily obtained. All that is necessary is to arouse the profession thoroughly to the exact situation, and it will do as it always has done before—act promptly and efficiently, and wipe out this blot on its fair name.

Diseases in the Aged.

DR. W. H. CURTIS, Wilmington, drew the following conclusions: 1. While the first requisite for longevity may, perhaps, be deemed to be an inborn, perhaps inherited quality of tissue structure wherein one part shall be just as strong as another, like the materials of the famous "One Hoss Shay," it is still manifestly possible and sometime practicable to detect the onset of those pathologic processes frequently originating in middle life, and whose development is synonymous with that symptom-complex known as old age. And, further, when a diagnosis is thus made, it is possible and frequently practicable to institute therapeutic measures that will insure the prolongation of the individual life. 2. The study of the processes of disease in the aged, together with their appropriate therapeutics, offers a rich field for individual research, and one that deserves more thorough cultivation. In this connection present knowledge of the subject needs thorough revision, amplification and systematization at competent hands, and to be made more accessible. 3. It is requisite to the successful study of disease in the aged, and certainly almost essential to the one who undertakes their management, that he be possessed of a peculiar mentality, combining not only a liberal education, but great resourcefulness in tact, patience and sympathy.

Treatment of Obesity.

DR. ALFRED C. CROFTAN, Chicago, presented some newer ideas on the treatment of this condition. He discussed the science and art of reduction cures, the calorimetric method, the three degrees of obesity and their management, the restriction of liquids, the element of exercise, the treatment of complications, thyroid therapy and results.

Significance of Hydrochloric Acid Variation in the Stomach Contents.

DR. E. J. BROWN, Decatur, spoke of the relative importance of HCl determination to other chemical findings, and to the physical examination of the stomach. Errors in diagnosis are made by placing too much reliance on HCl tests. He spoke of the relations of HCl excess to so-called bilious attacks, muscular rheumatism, gout, eczema, etc. He emphasized, too, the value of HCl tests in hyperchlorhydria, achylia gastrica, gastritis, cancer, ulcer and neurasthenic gastrica.

The Opium Habit and Its Treatment.

DR. GEORGE F. BUTLER, Chicago, said that there is no systematic routine specific treatment for this disease. The patient and not the disease, here as in all cases, is first to be considered. He first ascertains the maximum dose and the total daily amount of the drug the patient is taking. Then he begins the gradual or more rapid withdrawal of the morphin, the method employed being governed entirely by the character of the case. Under no circumstances must the patient know the amount he is given at any stage of the treatment. If the patient is taking it hypodermically, Butler endeavors to abandon the use of the needle as soon as possible, without detriment to the patient, substituting deodorized tincture of opium or codein in some vehicle, preferably non-alcoholic, which will completely disguise the taste of the opium. The patient is invariably encouraged to abandon the use of the hypodermic syringe. The opium in the mixture for internal use can be diminished as required. Free elimination by the bowels, skin and kidneys must be maintained. He believes morphinism can be cured in the great majority of cases if the physician can have the confidence and entire control of the patient, and have him in an institution where all the facilities for proper treatment are at hand, and provided he can keep the patient under observation a sufficient length of time and will treat the patient mentally and physically, and not merely the disease, according to some routine method.

Serum Therapy.

DR. E. R. LARNED, Chicago, classified sera as to their being efficient or inefficient. He spoke of efforts to produce new sera; also of the attempts made to improve sera which have been inefficient for the purposes intended. He spoke of the investigations that have been carried on with reference to making anti-gonorrheal and anti-syphilitic serum. Attention was directed to modifications of the Widal test for the diagnosis of typhoid fever, and of Wassermann's serum in the treatment of diphtheria.

Crime as a Social Disease.

GOV. CHARLES S. DENEEN confined his remarks mostly to crime in Cook County, where for eight years he was state's attorney, and was brought face to face with some of the worst criminals and criminal cases in the world. While crime has existed in the world almost from the beginning, it is only comparatively recently that it is being unearthed by modern methods, and it is only within the past 25 years that criminal procedure has been directed at the source of crime. The criminal court of Cook County is the greatest in the world. This court has a record of 4,000 prosecutions annually by the state's attorney of Cook County. He closed by saying that crime offered one of the widest fields for medical opportunity in the country.

Popular Diffusion of Medical Knowledge.

DR. H. C. MITCHELL, Carbondale, in his presidential address, brought forth the fact that the educated are the best class of people with whom the doctors have to deal; that there is less disease as the people advance in the educational scale, and that the educated are the most reasonable to deal with. He also stated that the society should advocate the passage of a law compelling people who wish to marry to undergo a physical and mental examination before entering on matrimony, and thus allay much of the suffering caused by immature marriage and consequent evil and sickness. Such a measure, he said, would cheat the divorce courts and the jails of their patrons.

Perirectal Abscess.

DR. CHARLES J. DRUECK, Chicago, emphasized the frequently overlooked details in the treatment of perirectal abscess, and took up the pathology, symptoms and diagnosis. Under treatment he considered the necessity of immediate evacuation. He referred to the facts and fallacies of the different methods of obtaining drainage, and made a few remarks relative to the method employed by him. He spoke of the danger of auto-intoxication and pelvic congestion during the postoperative treatment, and how to prevent it.

The Brain a Good Field for Surgery.

DR. CHARLES D. CENTER, Quincy, attempted to show by numerous well-authenticated cases of traumatism, that many portions of the brain need not be considered vital parts; that less reluctance should be shown by surgeons in invading the brain under antiseptic precautions, the argument being based on the insensitivenes of the brain to injury. The reason for much unsatisfactory brain surgery in the past is that operative measures have been used too much as a last resort instead

of a first resort, and operation has been done in the presence of inflammation, sepsis, or both. He reported a case of gunshot wound of the brain where the ball traversed the brain once in antero-posterior diameter, and partially traversed again in ricochet. Skiagraphs of the head of the patient at the present time were exhibited, and some interesting phenomena were noticed during the progress of the case.

Renal Diagnosis.

DR. FREDERICK LEUSMAN, Chicago, submitted the following conclusions: 1. Functional tests are helpful in causing us to study the kidney more accurately before operation. Their findings are not without value, but experience shows we can do as well without as with their assistance. When employing them in order to save life, we must at times operate, despite their findings. 2. The cystoscope and ureteral catheter have come to stay, and familiarity with their use is becoming more general every day. They are indispensable diagnostic aids. 3. Time will show the practical value or worthlessness of other diagnostic methods. 4. A chemical, microscopic and bacteriologic examination of the urine obtained from the ureteral catheter frequently means much to the patient. 5. The *x*-ray is desirable, if obtainable. 6. An early incision into the kidney in the presence of symptoms pointing to renal surgery is the safest thing for the patient. 7. Do not explore during suppurating conditions. 8. Most kidney operations demand probing to test ureteral patency. 8. Experience demands early nephrolithotomy as soon as the existence of stone is established; early nephrectomy in renal tuberculosis, and early nephrotomy or nephrectomy in acute renal abscess. 10. Nephrotomy is safer than nephrectomy in calculus, especially multiple; also in nephritis and cystic kidney. 11. In doing renal surgery we must not neglect to take care of the associated abdominal pathology—stomach ulcer, duodenal ulcer, cholelithiasis and cholecystitis, appendicitis, intestinal stricture or tumor, intestinal tuberculosis, uterine and pelvic adnexa disease.

(To be continued.)

THE MEDICAL SOCIETY OF THE CITY HOSPITAL ALUMNI.

Meeting held at the St. Louis Female Hospital, May 17, 1906.

Lymphangioma of the Hand.

DR. C. G. WRIGHT presented a case of this affection occurring in a negro child. Family history was not obtained; physical examination showed a well-nourished child; palpation and auscultation were negative. The skin showed numerous small scars; the inguinal lymph glands were enlarged. There was multiple dactylitis of the right hand, the dorsal surface of the fingers being involved. The bones were palpable in the mass, the enlargement being hard and nodular. The left hand was in good condition. The condition had existed since birth.

DR. JOHN GREEN, JR., thought that the condition of the eyes suggested struma. There was a phlyctenular keratitis with some marginal trouble of the lids. Yet he understood that the tuberculous nature of the condition was denied.

A Case of Complete Prolapse of Uterus.

DR. O. H. ELBRECHT'S patient was a washerwoman with a family and personal history negative. She has had three children. The prolapse had existed for eighteen years. There was pain and tenderness in the groin and in the uterus, and the bladder protruded through the labia majora.

DISCUSSION.

DR. F. J. TAUSSIG said that the question of therapy in these cases is puzzling to the profession. The first thing to be considered is whether or not the patient will consent to an operation. If not, the cup and bell supporting pessary may be tried, but it is not usually successful. Another form of pessary that is not so well known is the Menge pessary, which is a modification of the ordinary hard-rubber ring, with a stem which points outward. The main objection to the ordinary hard-rubber ring is that it is easily expelled, because it tilts. The idea of the bulb stem in the Menge pessary is to keep the round part transversely in the pelvis. The bulb end is short. He said that he had tried it in two cases with good results, both being cases of complete prolapse. Operation was suggested, but was refused. As regards the operative side of the case, Dr. Taussig said that he favors the operation of inverting the uterus in the vagina. If the tubes are resected, conception is prevented. By complete hysterectomy the chance of cystocele forming must always be remembered. Furthermore, in such an operation the vagina is obliterated, which is objectionable in married women. The danger of hernia likewise must not be overlooked.

DR. ELBRECHT said that the prolapsus did not bother this patient except when she was working. He did not think the use of pessaries practicable in women who have to do manual labor. They produce excoriations of the vagina. He said that he has yet to see a pessary that will last. They irritate and produce inflammation. He does not like the operation of inversion. He believes the ideal operation is to remove the uterus by the abdominal route and to sew the broad ligaments together. This gives the intestines something on which to rest. This is accomplished in the Fruend-Wertheim operation. When the possibility of pregnancy can not be excluded it is not right to do this.

Aneurism of Thoracic Aorta with Ulcer of Esophagus and Perigastritis.

DR. W. H. RUSH'S patient was a male, aged 56. He had no specific history. Nine years ago he had some caseous lymphatic glands of the neck excised. He presented himself on two different occasions with pains in the pectoral muscles, cough, no chill, but with decided pains in the epigastrium and symptoms suggestive of ulcer of the stomach. He left the hospital and returned some few months later with diminished weight, pain under the scapula and behind the sternum, also exaggeration of the stomach pains. Analysis of stomach contents after a test meal showed free hydrochloric acid, but no blood. He displayed marked tenderness on the left of the spinal column from the third to the ninth dorsal vertebræ. There was extreme tenderness in the entire epigastrium and left hypochondrium, the point of greatest tenderness being to the left of the median line, about two inches below the ensiform cartilage. A diagnosis of ulcer of the stomach and perigastritis was made, and the patient was given potassium iodid and mercury in view of the possibility of existing syphilis. Improvement followed for about two weeks, when he was suddenly seized with hemorrhage and in thirty minutes was dead. The autopsy showed the left pleural cavity filled with blood, the lower lobe of left lung filled with blood, the tissue soft and friable. The entire arch of the aorta and the thoracic aorta were atheromatous and projecting from the outer curve of the arch and from the outer side of the upper part of the thoracic aorta was a group of several small sacculated aneurisms, the smallest no larger than a pea. The largest, very thin-walled, about two inches long and irregularly cylindrical in shape, had ruptured into the left pleural cavity and into the left lung. The bodies of the fifth and sixth dorsal vertebræ were eroded. There was no ulcer of the stomach, but in the esophagus, on a level with the upper and smaller of the aneurisms, was an irregular shallow ulcer about 2 cm. in diameter. There was some perigastritis. Rush did not believe that the ulcer of the esophagus caused any of the pain, which was probably due to the pressure of the aneurism.

DR. C. H. SHUTT referred to the case of a man who presented symptoms of a chest disorder. The diagnosis was made of old pleuritis with dense adhesions. One day while walking about the ward he fell over and died. The autopsy showed a rupture of an aneurism into the chest. The dorsal and lumbar vertebræ were eroded from the eleventh dorsal to the third lumbar. The posterior wall of the aorta had entirely disappeared. Pieces of bone projected into the sac.

Ventral Hernia with Gangrenous Ulceration Over Sac.

DR. COPPEDGE'S patient was a very fat subject, a female. She acquired a hernia in the median line. An operation had been performed a few months previously, but the protrusion recurred. There are now three protruding areas. Each pro-

trusion is about the size of an orange. The abdominal walls are very lax. There is a gangrenous ulcer over one side.

DISCUSSION.

DR. DEUTSCH said that no operation would be justifiable in such a case, but he thought the ulcer could be excised so as to prevent the death of the patient from gangrene.

DR. ELBRECHT stated that the patient's condition had improved since entering the hospital. The ulcer was healing. The operation that had previously been performed was the overlapping operation of Mayo, made in this case by Dr. Brown of the City Hospital. He did not believe that any surgical procedure would avail at this time. He did not think that the ulcer should be healed by grafts, but rather preferred the method of healing by scar tissue, thus strengthening the abdominal walls.

Case of Spina Bifida.

DR. GIVEN CAMPBELL presented this patient, a girl of 12. Ever since birth she has been unable to use the lower extremities, bladder and rectum. This condition, he stated, was undoubtedly a meningo-myelocele, with projection of the lower part of the spinal cord into the tumor. Part of the nervous tissue was defective and produced the paralysis and the paralytic clubfoot.

Case of Insular Sclerosis.

DR. CAMPBELL also presented this patient, a woman of 28. The trouble began two years ago. The practical point to be deduced from the case is that when there is nervous trouble of an organic nature in a person of this age it is apt to be multiple sclerosis. Dr. Campbell then presented another case which he was inclined to believe was also multiple sclerosis. The history of the first patient (aged 28 years) was that she noticed a numbness four months ago. She can not use the right hand in eating. The knee-jerks are increased; Babinski reflex increased. The pupils react to light. Nystagmus is present. There were no signs of mental disturbance. The feet sometimes swell. She has a distinct nervous disturbance of the bladder. The ankle clonus present stamps the organic nature of the trouble. Campbell said that the most common diffuse organic condition that occurs in young women is multiple sclerosis. Among the symptoms are intention tremor, being a trembling in the hands when the individual attempts to perform some voluntary act that requires precision. In this case there is a distinct jerk of the eyeball. Among the important symptoms which this patient shows are spastic condition of the lower limbs and the ankle clonus. If the condition were due to a specific trouble there would be sluggishness to light reaction. In the two temporal halves of the optic discs there was a tendency to atrophy, which is symptomatic of multiple sclerosis. The other patient presented showed the phenomenon of "scanning speech," that is to say, an accentuation of words in talking much as one accentuates in scanning poetry. The intention tremor was very pronounced in the second case. The author believes rest cure the best treatment. The salicylates, iron and quinin help in some cases. The tendency of the disease, however, is to progress, although some patients hold their own for twenty years with this condition.

DISCUSSION.

DR. JOHN GREEN, JR., stated that he had examined the eyes of the first patient presented last November. There were some suggestive symptoms of insular sclerosis. Her vision was good. The left pupil was larger than the right. The reaction to light was sharp. The visual fields were apparently quite normal. He was only able to apply the rough finger tests at the time of the examination at the hospital. He said that in the differential diagnosis between hysteria and multiple sclerosis it is of great importance to get a careful estimation of the color fields. There did not appear to be any true nystagmus, but toward the end of the lateral excursions to the right and to the left there was a slight twitching. This is characteristic of the nystagmus of multiple sclerosis, this condition being more marked than the physiologic nystagmus. There was no ocular paralysis. Mobility was free in all directions. The patient never "saw double." The ophthalmoscope revealed pallor of the discs. The atrophy of multiple sclerosis is a postneuritic atrophy. Dr. Green called attention to the fact that ocular examination is often of the greatest assistance in estimating the differential diagnosis between multiple sclerosis and hysteria. Last year Dr. Schwab and Dr. Green reported such a case. There was slight ocular atrophy. Another sign was contraction of the fields for form and color. The fields were contracted in the usual way, not inverted. There was no evidence of tube-shaped fields. It is said that certain of these cases present eye symptoms years before the other symptoms of multiple sclerosis appear, and therefore it behooves the neurologist in any doubtful case to have the eyes examined.

DR. ELBRECHT said that most patients with spina bifida die within the first week of life. Operations for their cure are not successful. In view of the high mortality of the operation he did not approve of operation. Dennis has reported 57 cases, 25 operations, 15 deaths, 7 recoveries, 3 recoveries with no improvement. These cases often occur in bunches, and he has seen four at the Female Hospital in six weeks. The contraindications for operation are involvement of the bladder, hydrocephalus, clubfoot and marasmus. Deaths after operation occur from meningitis through infection.

AMERICAN GYNECOLOGICAL SOCIETY.

Thirty-first Annual Meeting, held at Hot Springs, Va., May 22-24, 1906.

The President, DR. RICHARD B. MAURY, Memphis, Tenn., in the Chair.

Officers Elected.

The following officers were elected for the ensuing year: President, Dr. Clement Cleveland, New York; vice-presidents, Dr. J. Clifton Edgar, New York, and Dr. Willis E. Ford, Utica, N. Y.; secretary, Dr. J. Riddle Goffe, New York (re-elected); treasurer, Dr. J. Montgomery Baldy, Philadelphia (re-elected); member of the council, Dr. Richard D. Maury, Memphis, Tenn.

The next annual meeting of the society will be held in Washington, D. C., 1907, in connection with the Congress of Physicians and Surgeons.

Is Gynecology Dead? Or Gynecology Against Overdone and Misapplied Surgery.

DR. E. C. GEHRUNG, St. Louis, Mo., protested against unnecessary, if not criminal, surgery that has been and is still being practiced in cases that can not be benefited by the knife, and in others that can be as well or better treated by other and less radical means. In many of the latter the knife may obtain a quicker and, perhaps, just as good result, yet at the cost of mutilation. Many women complain of various kinds and degrees of suffering, yet a most careful examination does not disclose anything on which to operate. Such women may be treated gynecologically with good results. All uterine displacements should be considered in the light of ptoses and herniæ. When the keystone between the pelvis and abdomen is displaced, abdominal ptosis must follow. These enteroptoses may be of minor degree only, or may extend to the kidney or other abdominal organs, and thus produce symptoms for which the simple uterine displacement will not account satisfactorily. The replacement of the pelvic organs frequently relieves the symptoms.

Concerning forward displacements, the situation is altogether different. Since anatomists say that anteversion and anteflexion are the normal positions of the uterus, the pathologist denies pathologic effects to antedisplacements, and the practitioner is only too happy to ignore a state of affairs for which the means of relief are so imperfect, apparently, and so difficult to apply, with so little or no results in prospect. Many of these displacements get well within a comparatively short time, while in others the support or pessary must be worn a long time. The wearing of a pessary he considered as much a cure as the wearing of a cicatrix. The author has obtained excellent results in the relief and cure of symptoms and diseases which have been declared utterly incurable by many gynecologists, by mechanical and other means. His results in cases

of antedisplacements and retrodisplacements have been extremely satisfactory.

DISCUSSION.

DR. GEORGE M. EDEBOHLS, New York, said that his views in regard to anteversion and anteflexion of the uterus have undergone radical changes since he began to practice gynecology. When he finds the uterus anteverted or anteflexed, it leads him to suspect that he has to deal with excessive mobility of the organ; in other words, it is the therapeutic equivalent of retroversion of the uterus, and he treats it like a case of retroversion, and invariably his efforts have been crowned with success.

DR. J. RIDDLE GOFFE, New York, expressed himself as having been convinced for many years that anteversion is a normal position of the uterus, and teaches that anteversion should be stricken out of the list of pathologic positions of the fundus of the uterus. He has not found in later years any occasion whatever to interfere with a fundus that lies well to the front. He believes the symptoms of which patients complain can be accounted for by other conditions, and he invariably finds some pathologic condition to account for the symptoms. He does not try to manipulate the fundus in any way with a view of fixing it, or to interfere with its mobility. Anteflexion he regards in a different light and believes that the anteflexed uterus is, as a rule, unless the flexion is acquired, an undeveloped uterus, and he treats it by improving its nutrition, stimulating its circulation, and developing the organ. If the case is one of acquired anteflexion, he treats it very much in the same way, but does not interfere with it surgically by shortening its ligaments or by attaching the fundus to abnormal tissue.

Enteroptosis.

DR. RICHARD R. SMITH, Grand Rapids, Mich., said that the subject is of especial importance to the gynecologist since the majority of the patients who come to him for relief show more or less signs of this condition. It may form merely the background of the picture which the physician has before him, or it may be the complete picture without other pathology. It can be left out of consideration, so far as treatment goes, in patients presenting neoplasms or pelvic inflammatory diseases. It is of great importance in considering lacerations, the various displacements of the uterus, as well as that large class of patients presenting pelvic symptoms, so-called, with slight or undemonstrable lesion. One should consider the matter of operation in such cases with great care, and be most guarded in his prognosis. Above all, in case operation is done, it is very necessary that a proper course of treatment be carried out afterward if one expects to get results. Enteroptosis and fair health are not incompatible. The enteroptosis may be of a decided degree and still the woman go through life comfortably and accomplish her work.

The treatment of enteroptosis should really begin in childhood, and it means all that proper hygiene can do for children. The outdoor life, the exercise and school work should be carefully balanced. The child should be encouraged in the various sports which develop the chest and the muscles of the trunk. If a woman comes suffering from the symptoms which accompany enteroptosis, she should be put to bed. She should be given an abundant, easily digested diet, massage, and any necessary indications as to the bowels and digestion should be met. Pain usually decreases rapidly under this plan. He emphasized the great good that may be obtained from an outdoor life. He advises many of his patients practically as he would a patient suffering from tuberculosis. If the abdomen is prominent or very flabby, and the woman has general abdominal tenderness, and more especially if he finds that by standing behind her and placing the hands over the lower abdomen (the patient standing) and lifting up, relief is obtained, he advises a well-fitting abdominal bandage. If the patient is young, the thorax more or less mobile, he has often given a system of breathing exercises with the idea of increasing the lung capacity and the size of the upper abdomen.

DISCUSSION.

DR. CHARLES P. NOBLE, Philadelphia, thinks that it is a mistake to teach that all patients who have loose kidneys have enteroptosis. It is only in a minority of cases that a loose kidney is complicated with enteroptosis. Many patients who have enteroptosis have loose kidneys; but the converse, in his judgment, is not true. He has seen a few cases of loose kidney due to traumatism, but the number is very small. The great majority of women who have loose kidneys are unmarried; therefore the question of child-bearing is a very small factor in these subjects. It has much more to do with enteroptosis by causing a flaccid condition of the abdominal muscles; but so far as the kidney is concerned, it is a small factor.

DR. MATTHEW D. MANN, Buffalo, New York, said that the all-pervading style among civilized women of constricting the waist line is an important causal factor of enteroptosis. The universality of this mode of dress has a great deal to do with the condition mentioned as it is more commonly found in women than in men. Men who wear tight belts, like blacksmiths, and men who constrict their waists with bands, are the subjects of enteroptoses. He condemned the use of corsets as worn by young women, and said the thorax can never attain its proper shape; the abdominal muscles lacked supportive power, and the contents of the abdomen would be forced down into an abnormal position. He has not been satisfied with operative procedures for the relief of the conditions mentioned.

DR. JOHN G. CLARK, Philadelphia, has had twenty-one cases of various ptoses of the viscera, chief among which have been ptoses of the transverse colon, especially of the sigmoid flexure. He recalls several cases of ptosis of the sigmoid flexure, where a loop of bowel has been caught, in which there was alternating constipation and diarrhea, which is not infrequently seen. He demonstrated a method which he has resorted to for the relief of this condition. He believes that in many of these cases inattention to the bowels is one material factor in the etiology.

DR. GOFFE asked what percentage of these cases came to operation?

DR. CLARK replied, a very small percentage, as medical men relieve the great majority of them.

DR. J. CLIFTON EDGAR, New York, called attention to the too early getting up of women after confinement as a causal factor of enteroptoses. Women, when they get up too early after confinement, complain of stomach trouble, and drift into the hands of a stomach specialist, who finds dropping of the stomach or intestines, yet they did not complain before. Such women are prone to attribute their discomfort to uterine trouble, to uterine displacement, etc. Constipation, alternating with relaxation of the bowels, produced by the constant administration of cathartics given during pregnancy, is one of many causal factors. There is a faulty involution of the intestinal supports. Involution of the abdomen should be complete before a woman gets up after confinement. Massage is a valuable means of prophylaxis. He believes in women, especially primipara, wearing an abdominal support for three months after confinement.

DR. J. RIDDLE GOFFE, in referring to the corset as a part of woman's dress, said he believes the new-fashioned straight front corset is an improvement over those previously worn. He thinks it is a beneficial garment to women. Instead of using abdominal supports, as was formerly his custom after laparotomy, he puts a woman in a straight-front corset, which is carefully made by a woman who carries out his idea. This corset supports the abdomen well. Women like it very much, and continue to wear it for years. He has also recommended this corset to be worn by women with pendulous abdomens.

DR. SMITH, in closing, said that a tight corset will exaggerate such conditions as he had referred to; but it must be remembered that enteroptosis is not due to the wearing of a tight corset nor to tight lacing. Enteroptosis is quite common in Arabian women, who never wear corsets.

Thrombosis and Embolism Following Abdominal Operation.

DR. JOSEPH TABER JOHNSON, Washington, D. C., said that these complications occur most frequently after supravaginal hysterectomies for fibroid tumors; although they may follow any abdominal section, notably after suspension of the uterus. The left leg is most frequently affected; both legs may be affected alternately. The symptoms generally appear between

the second and third weeks. Suppuration is rare. Recovery is the rule, although convalescence is protracted. Pulmonary, cardiac, or cerebral embolism may result, and prove rapidly fatal. He reported two such cases, and gave the histories of six cases of thrombophlebitis with slow recoveries.

Postoperative Embolism.

DR. EUGENE BOISE, Grand Rapids, Mich., said that this condition affects the pulmonary artery and its branches in the great majority of cases. An embolus presupposes a thrombus. For the formation of a thrombus three elements are necessary, fibrinogen and calcium salts, which exist normally in the blood, and nucleoproteid, which is never found in normal blood. Nucleoproteid is formed by the degeneration of the blood plates and leucocytes. Certain conditions of the blood and blood vessels predispose to thrombosis, as anemia or chlorosis, sepsis, excess of calcium salts, retardation of rate of blood current, traumatism, inflammation of coats of vessels, pressure, etc. Conditions calling for operation often involve one or more of these conditions. Fibroid tumors, which show the greatest percentage of postoperative emboli, are coincident with excess of calcium salts in the blood and degeneration of the musculature of the heart, with consequent imperfect contractions, and residual blood, with retardation of blood flow, predisposing to heart clot. Indications for treatment are mostly looking toward prevention. When pulmonary embolism occurs nothing is of much avail except the administration of oxygen.

DISCUSSION.

DR. CHARLES P. NOBLE, Philadelphia, said that of 7,130 women operated on in the Johns Hopkins Hospital, phlebitis occurred in 48. After perineorrhaphy, 4 times; after myomectomy, 19 times; after the removal of ovarian cystoma, 9 times; after hysterectomy for carcinoma, 5 times; after suspension of the uterus, 3 times; after suspensio-uteri and perineorrhaphy, 4 times; after hysterectomy for pelvic inflammatory disease, once, and after miscellaneous operations, 3 times. He has had embolism and phlebitis of the left crural vein occur twice after right nephrorrhaphies. He has had these conditions occur after hysterorrhaphy and after operations on the cervix and perineum.

DR. REUBEN PETERSON, Ann Arbor, Mich., said that the mystery in the etiology of thrombosis and embolism makes it doubly interesting. These conditions come on not only immediately after operation, but a month or six weeks afterward. He has a patient with an aggravated form of femoral thrombophlebitis, which appeared in the third week after operation. The operation consisted of the removal of non-purulent, nonadherent appendages. There was not enough sepsis connected with the case to warrant one in thinking that any such condition would develop. During the third week the woman developed thrombophlebitis of the left side of a severe type, in that it extended not only in the femoral region, but also up over the buttocks. Swelling was very intense. Very soon a dark area appeared over the left femoral vein and gradually this developed into a necrosis.

He has taken statistics from his clinic for the last four and a half years, but which do not include the case mentioned. Of 3,000 operations performed during this period there were 6 cases of femoral thrombosis. There were 1,050 women operated on. Of these, 3 came for removal of the appendages; one for hysterectomy for fibroid, although there were 80 or 100 cases in which fibroids were removed; one came for simple dilatation and curettement of the uterus, and in one case the record was not available. The left femoral vein was affected four times, and in one case the left groin and right leg were affected. As regards its occurrence after operation, in one case it occurred eleven days after operation, in two cases fourteen days, in two cases nineteen days and in one case twenty-one days.

DR. EDWARD REYNOLDS, Boston, said that thrombosis has occurred most frequently in his experience in patients treated for the correction of retrodeviations of the uterus, in which there has been a great deal of congestion before operation. He is inclined to believe that thromboses are more frequent now than they were a dozen or fifteen years ago.

DR. ANDREW F. CURRIER, New York, said that the tendency of surgeons in these days to get patients up in a hurry after the performance of serious operations has doubtless something to do with the production of thrombosis.

DR. SETH C. GORDON, Portland, Me., agreed with Dr. Currier and expressed the belief that too early getting up of patients after operation is causative of phlebitis.

DR. T. J. WATKINS, Chicago, said that evidence has been brought forth to show that thromboses are in some cases due to infection. Thromboses are common in infectious diseases where there is no traumatism. They also are common after typhoid fever. He believes that thromboses are nearly as frequent after typhoid as after abdominal section.

DR. J. MONTGOMERY BALDY, Philadelphia, said that while sepsis, pressure by retractors and traumatism of the pelvic veins are possible causal factors, yet none of the explanations so far offered seemed sufficiently feasible to explain a large number of cases.

SYMPOSIUM ON DILATATION VERSUS INCISION OF THE PREGNANT UTERUS.

Artificial Dilatation of the Cervix Uteri.

DR. GEORGE TUCKER HARRISON, New York, said that some indications for the artificial dilatation of the cervix are local morbid conditions which interfere to such an extent with the dilatability of the os uteri and cervix that the natural forces are inadequate to the end to be attained. In addition, direct danger to mother and child might furnish an indication for the artificial dilatation of the cervix, a danger only to be averted by a speedy delivery of the child. Of the local diseases, he referred especially to those which make a rigid, unyielding condition of the cervix, namely, chronic inflammations, syphilitic induration, carcinoma or hypertrophy of the infravaginal and supravaginal portions. Of the pathologic conditions which demand active intervention in the interests of both mother and child, to effect a speedy delivery he mentioned eclampsia, prolapse of the umbilical cord, placenta prævia portialis, asphyxia of the fetus, and beginning sapremic intoxication consequent on a dead fetus or retention of placental parts. Furthermore, the premature detachment of the placenta attended by internal or external hemorrhage is a grave and dangerous accident which demands prompt delivery. Artificial dilatation is indicated when in an obstetric operation (forceps, version, perforation) the passage of the head or breech meets with difficulty in consequence of an insufficiently dilated os uteri. Finally, an indication is furnished in cases of transverse presentation with premature rupture of the membranes, when version, according to Braxton-Hicks method, is not yet possible, and also in certain cases of narrow pelvis, with the head at the brim, in order to make the prophylactic version.

An indication for the incision of the os uteri is given when immediate delivery is a matter of paramount importance, the os uteri not being sufficiently dilated and the cervical canal, on the contrary, unfolded. Deep incisions of the cervix, usually combined with deep vaginal and perineal incisions, open up a wider field of operative intervention. The advantages of this procedure were pointed out. Mechanical dilatation of the cervical canal and external os uteri can be effected by distension with the fetal body after bringing down a foot, by the hand, by the use of expanding foreign bodies, such as tents, dilators, iodoform gauze, rubber bags or balloons.

Dilatation of the Parturient Uterus.

DR. PHILANDER A. HARRIS, Paterson, N. J., referred to a method of manual dilatation which he has employed for the past twenty-two years, and first described in 1893. By this method a far greater tonic strain can be applied on the musculature of the cervical ring than by any other manual method. It is also far less fatiguing than other methods. It relies mainly on the flexor muscles of the fingers and hands. Not all cervices are dilatable. Cancer of the cervix may render it undilatable. A cervix which has been partly cut away and amputated or sewn, or resewn, may contain so much white fibrous tissue that it is undilatable. The average time required safely to dilate the cervical ring to a circumference of eleven or twelve inches should be forty-five minutes. If the cervix is not effaced the average time of ninety minutes will be necessary safely to dilate the cervical ring to a circumference of eleven or twelve inches. The special advantage of knowing how to dilate man-

nally is that the operator always has his hands with him, and they scarcely ever fail to dilate the cervix if properly used. The disadvantages of the method are the fatigue incident to the task and the frequent changing of hands from left to right and from right to left is liable to carry septic matter into the vagina from the rectum or some unwatched area.

The advantages of instrumental dilatation, as accomplished by the instrument which the author presented, are that it will dilate any cervix that is dilatable. It is easy of introduction. It does not have to be withdrawn and reintroduced over and over again, as in the long operation when done by the hand. It is provided with a dynamometer which shows not only the number of pounds pressure which are being exerted on the cervical ring, but it also shows whether the ring is dilating under the pressure. The instrument has a safety device, so that extensive laceration can not occur if the instrument is used properly. Laceration, however, rarely occurs, except in the hands of impatient and unskilled operators. The instrument is made of steel and can be sterilized. No one should use it who has not previously and practically studied its behavior.

Advantages of Bimanual Dilatation of the Pregnant and Parturient Uterus.

DR. J. CLIFTON EDGAR, New York, said that no method of manual dilatation can ever entirely supplant instrumental dilatation and incision. The uterine and vaginal tampon, graduated hard dilators, branched rectal dilators, hydrostatic dilators, superficial and deep incisions and vaginal Cesarean section are all applicable in appropriate cases. Dilatation by hydrostatic bags, the fingers of one or both hands, and branched rectal dilators are feasible in most instances and are to be preferred to methods by incision. Incision of the uterus for purposes of dilatation is rarely indicated. The best method of cervical dilatation is the one which most closely imitates Nature's method of dilatation, hence the advantages of hydrostatic and manual dilatation. The bimanual method is a closer imitation of the natural process than any other method of manual dilatation, being in this respect analogous to the bag of membranes or the hydrostatic bag, because the force used for dilating the cervical ring is directed from above downward. Far greater force can be brought to bear on the cervical ring, if need be, by the bimanual method than by any other, because the fingers of both hands are brought into play, and the stronger flexor muscles of the fingers and hand are the ones made use of. There is no danger of prematurely rupturing the membranes, as there is when the fingers of one hand are passed through the cervix. There is no interference with the original presentation or position, since the finger ends closely hug the lateral uterine wall; this can not be said of any other manual method of dilatation nor even of hydrostatic bags. The bimanual method is far less fatiguing than any other method, because the strain is distributed in both hands and the sense of touch of the operator's fingers is unimpaired, as there is no constriction of the hands, as happens when one hand is used.

(*To be continued.*)

ASSOCIATION OF AMERICAN PHYSICIANS.

Twenty-first Annual Meeting, held at Washington, D. C., May 15-16, 1906.

(*Concluded from page 1723.*)

Therapeutic Advantages of a Refined and Concentrated Diphtheria Antitoxin.

DR. W. H. PARK, New York, described a method of refining this antitoxin by precipitating and eliminating the serum albumin and non-proteid constituents by means of ammonium sulphate, afterward precipitating other materials by sodium chlorid, and finally by dialysis rendering it very similar to the blood. This also gives it two and one-half times the concentration of the original. Nine months' use of antitoxin thus prepared seems to show that it is preferable to that formerly employed. Rashes following its use are milder, and constitutional symptoms practically do not appear. The results indicate that the proteid substances thus eliminated are deleterious.

A Case of Bacillus Coli Septicemia with Hemolysis.

DRS. A. D. BLACKADER and B. D. GILLIES, Montreal, reported this case, apparently uterine in origin, which occurred in a woman of 27. Hemoglobin was 48 per cent. and marked hemolysis was shown microscopically and by the presence in the blood of methemoglobin. Cultures from the blood, urine and uterus showed purely the colon bacillus.

DISCUSSION.

DR. T. G. JANEWAY, New York, said that in such cases one must think of one other thing, although that was not suggested by the autopsy in this instance, and that is the possibility of bichlorid poisoning. He has seen four cases within six months, and not one of them presented salivation. In the urinary passages bacillus coli infections often pass off and the patients recover.

DR. G. M. STERNBERG, Washington, said the injection of *Bacillus coli communis* into animals gives results similar to those described by Dr. Blackader. From the fatty changes in certain tissues Sternberg was led in some instances to suspect yellow fever, and when he was studying yellow fever he obtained from those subjects a pathogenic variety of the colon bacillus. It produced fatal results in dogs, but there was not such marked hemoglobinuria as that described.

Hemachromatosis and Diabetes Mellitus.

DR. THOMAS B. FUTCHER, Baltimore, said that hemachromatosis is distinguished by a triad of symptoms, pigmentation of the skin and viscera, hypertrophic cirrhosis of the liver, and, in advanced stages, persistent diabetes. He reported two fatal cases in which diabetes was a terminal event. The first was in a man of 45, an alcoholic, who died 20 months after onset of symptoms, diabetes being present during 15 months. The second patient was a man of 53, with striking pigmentation and acidosis, who had diabetes six weeks before death. In both, microscopic examination of the skin showed the characteristic iron reaction in the sweat glands and ducts. The disease has been called bronze diabetes. The cases should not be reported as such unless the pigment is found histologically. The pigment is of two kinds, one iron-containing, the other iron-free or hemofuscin.

DR. JAMES B. HERRICK, Chicago, mentioned a case giving a clinical picture somewhat like those reported, with also tuberculosis of the lung. Autopsy revealed atrophic cirrhosis of the liver, pulmonary tuberculosis, and absence of pigment in the viscera. The sequence of events in this case ought to have ruled out the idea of hemachromatosis, as for seven years there were indications of cirrhosis, for four years glycosuria, and lastly, pigmentation of the skin developed. With these three symptoms present one may be misled unless they are carefully analyzed.

Universal Skin Itching without Skin Lesion; Hematogenous Urobilinuria; Peculiar Erythrocytolysis.

DRS. JOHN K. MITCHELL and A. R. ALLEN, Philadelphia, reported the case of a man who for seven or eight years had chronic malaria, followed by Raynaud's disease, and finally itching of the whole body. The particular interest lay in the urinary and blood findings. To the urobilinuria a hematogenous rather than a hepatogenous origin was ascribed because: 1. No bile acids were present. 2. The liver function was always good. 3. There was no increase in the indican. The blood showed non-staining granular bodies, in or partly in or outside the red cells; they could not be stained by any method tried, appearing more like the endoglobular degenerative bodies which have been described than any other condition. Eosinophilia was conspicuous, reaching as high as 13 per cent. Treatment by hot baths and intermittent courses of the iodids and mercury diminished the itching and caused improved condition of the blood and urine; there is, however, a constant tendency to relapse.

Two Cases of Essential Pentosuria.

DR. T. W. JANEWAY, New York, said that these cases occurred in brothers. One had been mildly diabetic for a year, but the constant presence of sugar, notwithstanding change in diet, raised the suspicion of pentosuria, and tests confirmed its presence. It was also shown to be present in the second case.

The diagnosis requires several steps. The substance reduces Fehling's solution only after several minutes' boiling, when there is a sudden change to a greenish or orange-yellow throughout the specimen. This phenomenon should lead to the suspicion of pentose. The urine should then be tested by orcein, then by the spectroscope, and finally by ozosone prepared by a chemist. The clinical significance of the condition is mainly negative; that is, it should not be confounded with diabetes and the diet so modified. The real nature is not known, but it has no connection with decreased sugar combustion. It is analogous to cystinuria and alkaptonuria rather than to diabetes.

Aplastic Anemia with Report of a Case.

DR. R. S. LAVENSON, Philadelphia, reported the case of a woman of 35, previously healthy, who without apparent cause developed a profound, rapidly fatal anemia. The blood showed marked reduction of red cells and hemoglobin, a few normoblasts, no megaloblasts, and leukopenia with relative lymphocytosis. Autopsy showed complete aplasia of the bone marrow.

DISCUSSION.

DR. R. C. CABOT, Boston, has seen two cases believed to be of this type, but which were not confirmed by autopsy. The practical point is the prognosis. All these patients go progressively and rapidly to death in a few months. In cases of pernicious anemia there are usually waves of improvement.

DR. A. C. WARTHIN, Ann Arbor, took issue with the statements as to the rarity of the condition in question. In Michigan this is the most common form of pernicious anemia, most cases showing no changes in the bone marrow. These cases might well be called hemolytic anemias. The name aplastic is better applied to the megaloblastic type.

DR. ALFRED STENGEL, Philadelphia, does not agree with Dr. Warthin as to the absence of bone marrow changes in pernicious anemia. As to aplastic anemia being an independent disease, his views have changed somewhat, and he thinks there is, after all, a primary hemolysis in these cases. He does not believe there is aplasia of bone marrow before the symptoms of the disease develop.

DR. E. O. OPIE, New York, said that as the polynuclear cells are replaced by lymphocytes, and the former arise only from the bone marrow, this is an indication that the disease is primary in the marrow.

Exophthalmus in Leukemia.

DR. JAMES B. HERRICK, Chicago, reported the case of an Italian, aged 26, who had been ill for 32 days. He saw him during 10 or 12 days, the case running the typical course of acute lymphatic leukemia. Bilateral exophthalmus was a striking feature. Autopsy showed hyperplasia of the spleen and other lymphoid structures, and leucocytic infiltration of the lungs, liver and other organs. Exophthalmus was explained by a retrobulbar leukemic infiltration of the fatty tissue.

Leucolytic Action of Roentgen Rays and Injection of Leucolytic Serum in Leukemia.

DRS. J. A. CAPPS and J. F. SMITH, Chicago, showed that the serum of a leukemic patient under treatment by the Roentgen ray caused leukopenia in animals into which it was injected, and also caused destruction of the leucocytes in a hanging drop of human blood, the destruction of the lymphocytes being greater than that of the polynuclears. Serum from such a patient was injected into a person who had lymphatic leukemia and had been for three months without treatment. Four c.c. were injected with a drop in leucocytes during 48 hours from 160,000 to 104,000. The leucocytes then increased gradually until at the end of 13 days the original number had been reached. A second injection of 5 c.c. caused a drop less marked than the first, and the number was regained in nine days. After this the count went up to 320,000. A third injection of 10 c.c., when the count was 300,000, brought it down to 215,000, but the number was again attained in seven days. Since the treatment the leucocytes have been more variable than they were before. The points emphasized were: 1, The immediate drops of the leucocytes in all the experiments and the selective action of the serum on the mononuclear forms; 2, recovery of number was more quick after each of the injections, suggesting a partial immunity against the serum. The same immunity is also noted in cases being treated by the Roentgen ray.

DR. A. S. WARTHIN, Ann Arbor, did not regard the leucolyses reported as being very striking; many serums produce the same effect. There are also striking falls in the leucocytes in cases of leukemia not so treated, the cells in this disease being very unstable. In one case pneumonia caused a fall from 750,000 to 4,000. The improvement noted in cases of leukemia treated by the Roentgen ray is due to the destruction of leucocytes, but the disease itself goes on.

The Nucleus Test in Pancreatic Disease.

DR. J. DUTTON STEELE, Philadelphia, confirmed Schmidt's and Wallenfang's experiments on dogs and studied two cases of pancreatic disease and nine of other affections in human beings. In one of the cases of pancreatic disease, muscle nuclei in ingested meat were not digested. The chief fault with the test is that it does not show the reaction until the pancreas is far gone. Further experiments indicate, however, that a modification of Schmidt's method may be made to show partial as well as complete lesions of the organ. One case in contrast showed lack of digestion of muscle fiber when chronic appendicitis was the lesion.

Experiments on the Digestive Activity of Pepsin in the Gastric Contents.

DRS. JOSEPH SAILER and C. F. FARR, Philadelphia, spoke particularly on the advantages and disadvantages of Mett's method of estimating peptic activity; they find it reliable. The elaborate details of using it described by some they do not find necessary. Two essential points are that the albumin must be coagulated by boiling and that five minutes must be allowed for the test. Experiments indicate that the inhibitory factors in peptic digestion depend on the products of peptic activity on albumins. The effects of various foods and food preservatives on peptic digestion were given in detail. Boric acid did not appear to inhibit, and alcohol and formalin exercised but very little inhibitory action on digestion by pepsin. Benzoic acid and sodium sulphid caused strong inhibition and sodium chlorid a considerable degree.

Glandular Fever with Dermal Lesions Suggesting Syphilis.

DRS. ALFRED STENGEL, J. W. WHITE and J. S. EVANS, Philadelphia, detailed this case, which occurred in a physician of 26 years. He had anal fistula when a child, and later suffered from neurasthenia, which was relieved by glasses. The onset of the condition reported was sudden, as an itching of the skin and a tendency to urticaria. An icteroid condition then appeared and finally sore throat, there being vague pains in the body, the joints, and finally substernal. Fever then developed and the eruption became more marked. The lymphatic glands of the neck, axillæ, inguinal regions and finally in all the superficial groups, became enlarged. The eruption can best be described as an atypical erythema multiforme. Some leucocytosis was present, at one time reaching 22,000. The juice from massage glands and also some removed glands were examined for the *Treponema pallidum* and found negative. Cultures from the blood, enlarged glands, and from the tonsils showed a streptococcus resembling the *S. equi* found in the epidemic coryza and glandular fever of horses. The patient has gradually improved without specific treatment.

Experimental Study of Cerebrospinal Meningitis.

DR. SIMON FLEXNER, New York, described experiments carried out at the request of the New York health department. The experiments were made on 30 or 40 monkeys of the rhesus type. When culture of the meningococcus is injected into the spinal canal symptoms identical with those in man appear. They develop quickly, beginning in two or three hours, and when severe prove rapidly fatal, the animal dying within fourteen hours. If it survives forty-eight hours recovery usually occurs. Microscopically the organisms are found at first extracellular in the fluid, and the fluid is clear. In from two to six hours emigration of leucocytes and englobulation of cocci may be observed. The phagocytosis of cocci increases, except in

the rapidly fatal cases, and at the end of twelve hours most of the cocci are within leucocytes. Dr. Flexner has reached the conclusion that the cocci do not multiply in the cerebrospinal canal, the effect depending on the amount of material injected. By grading the amount of the cocci and by multiple injections of small amounts of culture, there can be induced a subinfection lasting a week or more. A serious infection can then be caused in the ordinary manner. The lesions found are not only those of an acute inflammation, but there is also dilatation of the cerebral ventricles. An interesting point in the condition is the localization of the disease. The exudate on the base of the brain has been ascribed to the fact that the infection comes from the nose, but it is also said that the monkey can not be infected through the nose. In the monkey, however, the sites of the lesions are the same as in man, even when the cocci are introduced into the lower end of the spinal canal. Some explanation other than that of the point of entrance is then needed. The upper nasal passages in some of the monkeys became inflamed and suggested that the coccus came down from the brain into the nose. In one instance careful examination left no doubt that this extension had actually occurred. Without throwing doubt on the possibility of infection through the nose, it appears probable that reinfection of the nose occurs from above. It remains yet to work out the poison and find how it acts. Some problems of immunity have also been investigated during the studies summarized.

Internal Hydrocephalus Complicating and Following Cerebrospinal Meningitis.

DR. HENRY KOPLIK, New York, described three forms, the acute, subacute and chronic. The first may come very suddenly at the end of twenty-four hours, and is dangerous to life unless quickly relieved. The subacute and chronic are the forms usually mentioned. The cause is commonly said to be the matting together of the structures at the base of the brain and occluding the ventricles. This is regarded by Dr. Koplik as only one cause, as in some cases the narrow ventricles are open. Hence, more than the mechanical factor must be active. The diagnosis of hydrocephalus is best determined by percussion of the skull by MacEwen's method or a modification of it. By this means can be told whether or not lumbar puncture is justified at the outset. Some cases get well without interference. Others will recover if pressure from hydrocephalus be relieved early. In chronic cases puncture is of no use, even the repeated punctures advised by some being valueless.

Nature of Spirochetes.

DR. F. G. NOVY, Ann Arbor, showed numerous lantern slides illustrating his views regarding the nature of spirochetes, based on his work with *Spirochæta obermeieri*. He does not agree with Schaudinn that they are protozoa. In the first place they have no structure as do other protozoa; they possess neither nucleus, micronucleus, flagellum or undulating membrane. Secondly, tests of resistance show that under adverse conditions they are not destroyed as are protozoa, but they approach the bacteria in resisting qualities.

Prevention and Cure of Relapsing Fever.

DR. F. G. NOVY immunizes rats and uses the serum from them, devising a unit for its measurement. By injecting this serum in conjunction with cultures of spirilla, he has reached the conclusion that the serum treatment, or prevention, of relapsing fever in human beings is a possibility. He regards the tick fever of Africa as distinct from the relapsing fever of Europe.

Thrombophlebitis of Splenic and Portal Veins and Its Relation to Splenic Anemia.

DR. A. S. WARTHIN, Ann Arbor, reported an additional case of this lesion, supplementing the three previously put on record by Dock and Warthin, and illustrated the histology by lantern slides. The fourth case is one of relatively acute splenic thrombophlebitis following pneumonia, and presenting features of secondary anemia and splenic fibrosis. Many of the cases of this condition reported followed typhoid fever, the patient never fully recovering from that disease. The cases indicate that certain forms of Banti's disease have primarily nothing to do with the spleen. The advisability of the term splenic anemia for them is doubtful. Those in which thrombophlebitis is present had better be put in a separate class under that name. The sequence appears to be thrombosis, fibrosis of the spleen, and passive congestion of the liver and other structures. Apparently old infections underlie the condition.

Two Cases of Sudden Death Associated with Hypertrophy of the Thymus.

DR. WARTHIN also presented slides of these cases. Both concerned boys of 6 years. One had enlargement of the glands simulating Hodgkin's disease; in the other the glands were not enlarged. Both died the so-called thymic death. In each the thymus was 17 cm. long, reaching from the floor of the mouth to the apex of the heart, and causing tracheal stenosis. In both the lymph nodes showed the same changes, atrophy and disappearance of the lymphoid elements, with hyperplasia of the endothelial and fibrous hyperplasia. Similar changes were also found in the spleen and bone marrow. The thymus showed lymphoid hyperplasia and an eosinophilia. The findings are taken to indicate the action of toxemia which resulted in lymphoid exhaustion of the lymph nodes, bone marrow and spleen, and a compensatory hypertrophy of the thymus. The cases suggest a relationship between Hodgkin's disease and thymic hypertrophy.

Clinical Notes on Eighty Cases of Exophthalmic Goiter.

DR. W. GILMAN THOMPSON, New York, spoke particularly of three features of the disease: 1. The large number of cases in which an acute febrile toxemia develops. In addition to the cardinal symptoms there appear fever, acute dilatation of the heart, cardiac murmurs, dyspnea, precordial, thoracic or abdominal pain, edema of the legs, erythema and sweating. The temperature not infrequently reaches 104 or more, and may persist for weeks. These toxic exacerbations are particularly favorable for treatment by the new cytotoxic serum. 2. The cause of these toxic attacks appear often to be intercurrent mild infections, as tonsillitis, influenza, bronchitis or gastrointestinal disturbance. 3. The close resemblance of these cases when aggravated to malignant endocarditis. In the hospital at one time was a case of each, and they were interchangeable, as far as clinical symptoms were concerned, for teaching purposes. Dr. Thompson has never seen a case of this condition end in recovery with the exception of two or three treated by the serum described by Dr. Rogers.

Treatment of Exophthalmic Goiter by a Specific Cytotoxin.

DR. JOHN ROGERS, New York, described the results of treatment with the serum prepared by Dr. Beebe and himself. Of 41 personal cases, 8 patients were cured, 25 improved, 6 gave no result, and 2 died. Of 28 patients treated by others, 3 were cured, 16 improved, and 9 unimproved. Two types of serum are employed—the pathologic, obtained by injecting rabbits with the products of diseased glands, and the normal, obtained by the use of normal glands. There is not a great distinction between the two, but they differ in activity. The serum is given subcutaneously by hypodermatic injection. Reaction follows the injection, usually according to the benefit derived in severity. Swelling after a few hours appears, the part becoming not unlike erysipelas in appearance. Constitutional disturbance also accompanies the swelling. A reaction that is alarming occurs occasionally. No patients have died from this, but Dr. Rogers believes they might. The reaction is believed to be due to the entrance of the serum into a vein. The dosage varies. Usually 1 c.c. is given every other day, with the patient in bed; if reaction occurs, no more is given until it subsides. Regarding the limitations of the serum, if the goiter is small and soft the chances for improvement or cure are good, by the normal serum. If the thyroid be large and hard, the case is doubtful. Cases may respond to pathologic serum when they do not to normal serum. The acute toxic are the most amenable; the chronic toxic the most refractory. Improvement in the chronic or subacute cases is usually slow. Dr. Rogers recognizes these forms of the disease: 1, The simple subacute or chronic; 2, the acute toxic; 3, the chronic toxic; 4, the atypical. Under the last are included the simple adeno-

matous or cystic goiter with subsequent Graves' symptoms, the cases without goiter, and the psychopathic cases.

Preparation of a Specific Cytotoxin for Exophthalmic Goiter.

DR. S. P. BEEBE, New York, gave in detail the principles underlying the serum referred to by Dr. Rogers. It had its basis in serums cytolytic for other organs, as the liver and kidney. The nucleoproteids alone or in combination with the thyroglobulin of the gland are employed, as it is believed, to produce higher specificity than when the whole gland is employed. The serum is based on the assumption that in the disease in question there is hyperactivity of the thyroid. The serum possesses both cytolytic and antitoxic properties. The presence of the latter is shown particularly in the acute toxic cases which are so amenable to treatment.

Pathology of Exophthalmic Goiter.

DR. JAMES EWING, New York, gave a lantern slide demonstration of the changes in the thyroid in the disease in question. He believes the change is one of functional hypertrophy. To establish this theory it is not necessary that a specific change be found in the gland. Histologic studies favor the theory of hypersecretion, though the structure need not differ essentially from that found in simple goiter. Clinical data offer a definite basis for serum therapy in uncomplicated cases. The possible implication of other organs and the permanent lesions in many organs in prolonged cases seem to preclude the possibility of securing any agent that will be curative in all cases.

DISCUSSION.

DR. S. J. MELTZER, New York, showed photographs of a case of exophthalmic goiter cured by treatment with thymus gland, and afterward the administration of sodium phosphate. As to the work of Rogers and Beebe, it is a remarkable discovery. They should see, however, if the serum attacks the thyroid in animals as did the hepatolysins the liver in their experiments.

DR. F. FORCHHEIMER, Cincinnati, reported 31 cases of exophthalmic goiter treated in an empirical manner by giving 5 grains of hydrobromate of quinin and 1 grain of ergotin three or four times daily. There was a decided improvement in the patients, beginning in some in six weeks, in others only after fifteen months. In four of the cases the method failed, and four are still under treatment. The remaining 23 patients have been comparatively restored to health.

Enzymes in Phagocytic Cells of Inflammatory Exudate.

DR. EUGENE L. OPIE, New York, described the technic for determining the ferments in leucocytes by which he arrived at the proof of two, one in the polynuclear and the other in the large mononuclear. The former digests actively in an alkaline medium and to it he has given the name leukoprotase. That of the mononuclear cells digests only in an acid medium and has been named lymphoprotase. The importance of the ferments in the progress of pathologic processes is very great. He has also found in the blood in a case of myelogenous leukemia a proteolytic substance capable of digesting fibrin.

Experiments in Psychotherapy.

DR. L. F. BARKER, Baltimore, was much impressed by the methods of Dejerine, who isolated certain patients and impressed on them the fact that they ought to get well. He has tried the plan on a small scale in the Johns Hopkins Hospital with results that are distinctly gratifying. Only the simpler methods of isolation, persuasion and re-education or suggestion, have been used as a rule, hypnotism being used only in special cases. Neurasthenics and that class of subjects do best under this mode of treatment.

Effect of the Roentgen Ray on Unresolved Pneumonia; Nature of Toxic Reaction to Roentgen Ray.

DR. D. L. EDSALL, Philadelphia, reported observations on two cases of unresolved pneumonia. Under the action of the rays one case cleared up in five days and the other in ten days. The changes in metabolism during this time showed a remarkable increase in the output, just as occurs in ordinary pneumonia at the time of the crisis. In the three cases in which he used the rays response was prompt. It appears worth while to try this agent farther in cases of unresolved pneumonia. As to the nature of the toxic reaction to the Roentgen ray, a case of pernicious anemia was instructive. A slight exposure was followed in a few hours by a violent reaction. The patient improved somewhat at first, but died within a week or two. A second patient suffering from polyarthritis was given a slight exposure. He was evidently ill that night and next day was worse, and death was feared. He finally slowly returned to the original condition before the exposure was given. In both these cases the excretion was diminished. The indications are that the Roentgen ray causes a remarkable breakdown of tissue already toxic and this sudden change causes metabolism to halt. The experiments confirm Dr. Edsall's previous views that the action of the rays is on something already in the body and not the production of a new substance. The best explanation is that it acts as a ferment accelerator.

Officers Elected.

The officers for the ensuing year are: President, Dr. F. P. Kinnicutt, New York; vice-president, Dr. James Tyson, Philadelphia; secretary, Dr. Henry Hun, Albany; recorder, Dr. S. Solis-Cohen, Philadelphia; treasurer, Dr. J. P. Crozer Griffith, Philadelphia; member of council, Dr. L. F. Barker, Baltimore.

Active members elected are: Dr. W. M. L. Coplin, Philadelphia; Dr. S. W. Lambert, New York; Dr. G. H. Weaver, Chicago. Associate members elected are: Dr. A. A. Eshner, Philadelphia; Drs. R. G. Freeman and J. S. Billings, Jr., New York; Dr. I. P. Lyon, Buffalo; Dr. M. J. Rosenau, Washington; Dr. E. R. Baldwin, Saranac Lake; Dr. H. C. Moffitt, San Francisco.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Nocturnal Enuresis.

In considering the most common causes of nocturnal enuresis V. Chastel de Boinville, in an article in the *Practitioner*, states that nocturnal enuresis is commonly found in weak, excitable children. It occurs, however, in every class of life. It is more common in boys than in girls, but among adults women are more frequently affected. It is very frequently associated with some local irritative process, such as thread worms, and it also occurs more frequently in those who are in the habit of lying on the back during sleep, as the weight of the urine presses on the trigone of the bladder. He mentions the fact also that pressure exerted between the bedclothes and the sacrum may reflexly be a contributing cause. He speaks of the pernicious habit of overloading the stomach at the evening meal, also flatulence of the stomach or bowels from any cause as etiologic factors. A bed which is too hot or, on the other hand, one which is too cold, as may be the case in the winter months, also contributes to this condition. Children born in warmer climates, such as in India, may acquire the habit on coming to a colder climate. In a great many instances it is the symptom of organic disease of a serious nature, many of which he enumerates in his article. The treatment, according to this author, must pertain to removing any conditions or group of conditions which may be found to contribute to this malady, as nocturnal enuresis is not in itself a disease, but a symptom. Any sources of general debility must be checked, if possible, and every means taken to strengthen the patient. Exercise in the open air is of great value, and in some cases change of air is very beneficial. Cool baths and, in obstinate cases, general massage along with suitable tonics, are advised. Any source of local irritation, the most frequent of which is thread worms, must be promptly removed. The urine in any case should be thoroughly tested, and if any irritating combinations are found, they should be properly corrected. The

time of eating should be carefully regulated, and special attention should be given to the evening meal, which should consist of easily digestible food, and tea and coffee, on account of their diuretic action, should be avoided. As a rule, he advises against a strong animal diet, and against those articles of food which are liable to produce flatulency. Inquiry should be made as to whether or not nocturnal fits have been overlooked by the nurse or parents, and if these fits should be found to be present, bromids in proper doses should be administered. In hysterical and mentally weak patients strict discipline should be installed, avoiding, however, scolding or punishing the child. The child should be encouraged to use all his will power to overcome the trouble. The urine should be passed the last thing before going to bed, and it is a good plan to accustom the patient to emptying the bowels in the evening rather than in the morning. By this means the evil effects of the full rectum are disposed of, pelvic congestion is relieved, and the gradually enlarging bladder meets with a minimum amount of resistance during sleep. The writer speaks of this simple precaution alone as having cured the habit. The tendency to lie on the back during sleep may be overcome by attaching a bobbin or some other hard body to the patient in such a position that during his sleep, if he lies in this attitude, the pressure of the bobbin will disturb him and cause him to turn on his side. The night clothing should be properly regulated so as not to allow the child to get too hot or too cold when asleep. The bed should have a moderately hard mattress, and the clothing should not be too heavy. It is sometimes well in these cases to awaken the patient at least once during the night to empty the bladder.

DRUGS.

Of the medicinal preparations employed, the author recommends belladonna or atropin and nux vomica or strychnin as the best preparations, although these drugs differ widely in their general effects, they each directly or indirectly have control over the sphincters. Belladonna acts probably by producing a paresis of the inhibitory nerve fibers of the sympathetic, and also by depressing the peripheral nerve endings of the sensory nerves. In ordinary medicinal quantities its action is not very powerful, and as children bear the drug well, it is recommended administered in large doses, beginning, however, with moderate-sized doses, such as perhaps 2 minims of the tincture for a child of 5 years. The dose may be gradually increased until some effects are shown on the pupils, and after ten days or two weeks the quantity may be gradually diminished. He advises the administration of two doses daily, one just before the evening meal and the other just before retiring. In this way the maximum action of the preparation is obtained at the desired period. In the administration of atropin it should be injected subcutaneously, the doses ranging to suit the age of the child, and increased to the point of tolerance. The injection should be given about one hour previous to retiring. For a child of 5 years he recommends a dose of 1 minim of a 1 per cent. solution to begin with. Nux vomica and its alkaloid, strychnin, act by stimulating the motor nerves in the spinal cord, and are of value because of their tonic effects. Care must be observed in the administration of these drugs to avoid any cumulative action, for in such instances more harm than good may be done by their tendency to set up intermittent contraction in the muscular walls of the bladder. Consequently the object is to administer such quantities as will maintain the tone of the sphincter muscle and strengthen the patient generally. For a child of 5 years he recommends 1½-minim doses of the tincture of nux vomica, given three times daily after meals, and continued for several weeks. If desirable, the nux vomica may be combined with belladonna without fear of decreasing the influence of either preparation over the condition present. For this purpose he recommends the following combination:

R.	Tincturæ belladonnæ	m. xxxii	2|12
	Tincturæ nucis vomicæ	m. xxiv	1|55
	Syrupi aurantii floris	ʒiiss	|15
	Aquæ q. s. ad	ʒiv	120|

M. Sig.: Two teaspoonfuls three times a day for a child of 5 years.

If for any reason it is desirable, the tincture of belladonna may be provided in a separate bottle and added to the nux vomica preparation in increasing quantities, as the physician may see fit. The author mentions urotropin (hexamethylenamin) as sometimes of value when the urine is at fault; and the alkalies, he states, are invaluable for a patient having highly acid urine. Potassium bromid, chloral hydrate, opium, codein, morphin, cannabis indica, and other narcotics should, as a rule, be avoided.

LOCAL MEASURES.

When medicinal preparations do not succeed local methods may be resorted to. For this purpose he recommends cold douches applied to the perineum as being very efficacious; they should be given the last thing before retiring. Counter-irritation by means of fly blisters applied to the spinal column has not proven of much benefit in his experience, and, indeed, in some cases it has aggravated the condition. Good results, however, have in some instances followed the passage of a sound into the urethra. Where this method is employed, it must be carried out daily for several days to obtain proper results. In other cases good results have followed cauterization of the urethra in females, and has been more successful when the cauterization is carried well back toward the neck of the bladder. In males the catheter may be passed down to the prostatic portion of the urethra, and a solution of silver nitrate, 10 grains to the ounce, may be injected.

ELECTRICITY.

As regards electricity, its effects, according to this author, are, as a rule, only transient in character. The constant and faradic current both have been used. One pole may be placed over the pubes or over the lumbar spine, and the other in the perineum or even in the urethra. The current should be reasonably strong, without producing any unusual symptoms on the part of the patient. It should be kept in mind, however, that nocturnal enuresis in children usually ceases of its own accord about the period of puberty, and consequently heroic measures are not advisable, nor is it wise to introduce electric or other sounds into the genital orifices of children approaching this age. If necessary, local massage may be applied in connection with cold douches to the perineum, and the sphincter itself may be massaged by means of a probe introduced into the neck of the bladder. But in cases of children, again, there is always great danger of producing the habit of masturbation. In adults, nocturnal enuresis often depends on conditions more serious, such as tumors in the pelvis, or organic disease of the nervous system. In such cases, of course, but little can be done in the way of a cure.

OTHER CAUSES AND THEIR TREATMENT.

R. T. Morris, in New York *Med. Jour.*, states that preputial adhesions are predominantly the cause of enuresis, particularly among girls, and recommends that no treatment be outlined until that trouble has been disposed of. This disturbance is more frequent in girls than in boys.

J. Ullman, in an abstract in "Practical Medicine Series," summarizes the following outline of treatment: 1. Hygienic; 2, psychical and suggestive; 3, physical or mechanical. He emphasizes the importance of massage combined with the administration of atropin internally. The object of the massage is to remedy the insufficient action of the detrusors and sphincter vesical. He, therefore, recommends that:

1. The rectum be freed of fecal matter and massage applied, by means of the index finger, to the sphincter vesicæ, gently tapping it for one-half to one minute.

2. A deep circular massage should be applied over the hypogastric region for two or three minutes.

3. The patient should be placed in the dorsal position, with the knees tightly drawn together, and instructed to resist while the knees are drawn apart; and with the knees wide apart he should be told to resist while they are drawn together. Adduction and abduction of the limbs should be carried out in the same manner. These movements should occupy about two minutes.

4. The patient should be instructed to stand against the wall or a door and cross and recross one thigh over the other for a period of five minutes.

5. Vibratory massage may be applied to the lumbar and sacral regions for one or two minutes.

Percy Lewis, in *Med. Record*, has noticed that infants fed on starchy foods always pass a larger amount of urine than normal, and that a decrease in the amount takes place when this form of food is cut off. Starchy food, however, may be allowed for breakfast as a rule when the nocturnal enuresis has stopped. At the same time tonic treatment should be instituted and pushed for a period of four weeks, when a normal diet may be resumed.

Medicolegal

Physician's Account Book May be Used to Show Birth.

The Court of Criminal Appeals of Texas says that in Neill vs. State, a prosecution for rape, the state introduced a physician, who testified that he waited on the mother at the time the prosecutrix was born, as shown by his memorandum in medical accounts made at the time. The accused objected on the ground "that the same was not admissible for any purpose. There is only one kind of book admissible in evidence; that is, an account book between the parties, where there is a suit between the parties connected with the account. It is hearsay testimony and improper." But the court holds that these objections were not tenable. It says that it has heretofore held that books kept by a physician, when proper predicate was laid, as the record here showed, are admissible to show the birth of children.

Privilege Not Waived by Mere Taking of Deposition.

The First Appellate Division of the Supreme Court of New York says that the plaintiff in the personal injury case of Clifford vs. Denver & Rio Grande Railroad Co. took the deposition of a physician in Colorado, but she did not use same at the trial. When the defendant then proposed to use it, she objected to certain portions thereof involving disclosures by the physician. Thus was raised the question of whether the plaintiff, by procuring this testimony to be taken, waived the prohibition contained in section 834 of the New York Code of Civil Procedure, which prevents a physician from disclosing any information which he acquired in attending a patient in his professional capacity. The court holds that she did not. It says that a waiver, by section 836, must be made in open court, on the trial of the action, and that it certainly could not be said that the proceeding to take the testimony by commission before the trial was a proceeding in open court on the trial of the action. After the testimony was taken and the deposition returned to the court, the plaintiff was not bound to read it. Not having read it, when the defendant offered to read same, it made the physician its witness, and the competency of the witness to testify was to be determined by the trial judge. Nothing that the plaintiff had done before and nothing that had happened in the course of the action could be a waiver of the right to prevent a disclosure to the jury of the facts acquired by this physician in attending the plaintiff except a waiver in open court or a written stipulation signed by the attorneys. The prohibition being absolute, unless waived, and the only method by which it could be waived, namely, a waiver in open court on the trial, or a written stipulation signed by the attorneys, not appearing, the court thinks that it was rightly held that the evidence was not competent.

Insurance of Physician and Septicemia—"Operation."

The Supreme Court of Illinois says, in Central Accident Insurance Co. vs. Rembe, that a practicing physician and surgeon having agreed to take an accident policy, was tendered one containing the clause: "This policy does not cover . . . death . . . resulting wholly or partially from any of the following causes: . . . voluntary or involuntary taking of poison or contact with poisoned substance." He declined to accept it, and insisted on an additional clause to cover blood poisoning or septicemia. The policy then had a slip attached which read: "Policy No. 75,719 is hereby extended to cover that class of injuries known as septic wounds, caused by accident while performing any operation pertaining to the business of the insured, the poison matter being injected into the wound at the time of the accident and resulting in disability or death under the conditions of the policy." This was accepted.

Thereafter, during the treatment, in his office, of a patient afflicted with syphilis in a virulent form, of several weeks' duration, the physician, while in the act of preparing medicine to be administered to the patient, attempted to remove the cork from a glass bottle, and the top or neck of it was accidentally broken, cutting a small wound in one of the fingers of his right hand. He immediately dressed the cut, binding it up in gauze cloth and rubber tissue. On the afternoon of the same day, and again on the next day, he treated a child suffering from an abscess in the ear, which was discharging pus. On the next morning after breaking the bottle the wound on his finger began to pain him and swell, and on the second day a well-defined case of septicemia, or blood poisoning, manifested itself. Skilled physicians were called, who, by operation and other means, made every effort to save his life, but failed, his death occurring in about three weeks after the accident.

The insurance company refused to pay the policy, and the beneficiaries brought suit, recovering a judgment, which is affirmed. The court says that the facts not only tended to prove, but established, the fact that the death of the insured resulted from the accidental injury to his finger. And it is unable to see how it could be seriously contended that under these facts and the law applicable to the case his beneficiaries were not entitled to recover under the first count of their declaration, which declared on the policy as it was first tendered without the attached slip and averred that while the insured was in pursuit of his avocation as a physician and surgeon, and while undertaking to remove the cork from a bottle, his finger was injured, and the wound caused blood poisoning, resulting in his death. The policy without the slip provided that on the death of the insured caused by external violence and accidental means the company would pay the beneficiaries therein named $5,000. The cause of the death, as the court understands it, was the wound in the finger, by means of which blood poisoning intervened. Without the accidental wounding of the finger blood poisoning would not have ensued, and, therefore, that disease was only incidental to the wound.

The claim, not seriously insisted on, that the inoculation was caused by the pus discharged from the child's ear, was wholly unsupported by the evidence.

Again, with regard to the contention that the death of the insured was caused by the wound coming in contact with virus from the syphilitic patient, either on the hands of the insured or on the neck of the bottle which was broken, the court says that if poisonous germs entered the wound, causing blood poisoning, that wound would not be, within the fair meaning of the policy, "coming in contact with poisonous substance," causing death. Even if the germs were a poisonous substance within the meaning of the policy, those germs, according to the testimony, would have produced no injurious effect, but for the wound in the finger. They only became poisonous when allowed to mingle with the blood.

The court is also satisfied that the evidence justified the verdict in favor of the beneficiaries under the second count of the declaration, which declared on the policy as amended by the attached slip, and averred the injury from the broken bottle, and that poison matter from the patient suffering from syphilis became injected into the wound at the time of the accident, resulting in death. It says that it seemed to be contended on behalf of the company that the provision in the slip only covered cases where a surgeon or physician was in the act of performing an operation or administering treatment on a patient, and in the act met with some accident which caused a wound, while the wound in this case was not inflicted while the insured was so engaged in performing an

operation or administering treatment to the patient. But in the court's opinion this was too narrow a construction of the language of the policy.

Suppose the insured had cut his finger by accident while preparing instruments with which to perform a surgical operation, or if, after the operation, in disinfecting the instrument used he had accidentally wounded himself and blood poisoning had in either case intervened, would it be claimed there was no right of recovery under the conditions of this policy? The court hardly thinks it would be seriously so contended. The clause was, "caused by accident while performing any operation pertaining to the business of the insured." His business was both that of a surgeon and physician. His treatment of the patient was a continuing service, and should not be limited to any particular act in such treatment. The preparation of medicine to be taken internally at the very time the patient was in his office, or subsequently, according to directions, was, the court thinks, administering treatment pertaining to the business of the insured, within the meaning of this clause of the policy. "Operation" meant treatment pertaining to the business of the insured.

Furthermore, the court says that if the accidental cutting of the finger caused the death, then, under the proof in this case, it was clearly independent of all other causes.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

May 26.

1 *Heart Failure as the Result of Deficient Food. A. Haig, London, England.
2 Syphilitic Lesions of the Joints in Hereditary and Acquired Infections. R. W. Taylor, New York.
3 Syphilitic Arthritis. H. W. Frauenthal, New York.
4 *Conservatism in the Treatment of Senile Hypertrophy of the Prostate. J. Van der Poel, New York.
5 *Gonococcal Infection in Woman. E. H. Grandin, New York.
6 Gigli's Operation. J. A. Schmitt, New York.
7 *Occurrence and Prognosis of Pneumonia as Studied at the Lincoln Hospital. L. F. Bishop, New York.

1. **Heart Failure as Result of Deficient Food.**—Haig says that he has seen many instances in which deficient nourishment had led directly to more or less marked heart failure. If there is a condition of slow, steady, and constant deficiency of food there comes a time when not only do the less important tissues suffer, but the heart, muscles and brain cells begin to suffer with them to some extent. The signs of heart failure are perfectly definite and distinct, and those who know how to look for them can scarcely miss them. The three chief objects of treatment are: The diminishing of the work of the heart, the increase of its nourishment, and for a time the administration of a tonic. In practice he gives all such adults who consult him nine grains of albumin a day for each pound of body weight. He declares that although this is only a rough guide it is decidedly better than none. He also watches the temperature of the body, the condition of the blood, the ratio of the capillary reflux to blood pressure, and the other circulatory signs, and looks on these taken together as safe and certain guides to a condition of satisfactory nourishment and nutrition.

4. **Conservatism in Treatment of Senile Hypertrophy of Prostate.**—Van der Poel believes that catheterism properly applied and at the right time renders unnecessary many operations. Modern technic and advance in the knowlege of prostatectomy now make operations justifiable which would not have been so according to former statistics. Operation must be considered much earlier in poorer patients or when aseptic catheterism is practically impossible than in other cases. Prophylactic prostatectomy can not be recommended. In acute retentions the catheter should be given a full trial before intervention. In certain cases catheterism will reestablish the urinary function for many years, no matter what may be the condition of the prostate. In chronic retentions, if the case is septic and has been so for some time, clean catheterism seems to be powerless to eradicate its effects and operation is indicated.

5. **Gonococcal Infection in Women.**—Grandin declares that fully 60 per cent. of his operative work among women would not exist if it were not for the gonococcus. About 45 per cent. of sterile marriages are due to the gonococcus. It is said that about 75 per cent. of males have had gonorrhea at least once, while fully 30 per cent. carry the latent germ to the nuptial couch. It has been estimated that about 30 per cent. of blindness is traceable to this disease. The disease is tolerated on account of ignorance on the part of the laity. The code of morals should be the same for both man and woman. The author believes that in time public opinion will make itself heard and that boards of health will be obliged to place gonorrhea in the class of acute infectious diseases.

7. **Occurrence and Prognosis of Pneumonia.**—Bishop states that pneumonia, in a measure, ranks with the degenerative diseases. If people live long enough and become feeble from age, and escape death from epidemics, or any of the infections, the contraction of pneumonia is one of the things particularly liable to occur. Damage to the kidneys and circulation, such as comes from high living or overwork, predisposes to fatal pneumonia. The writer declares that clinically it does not seem to him that the infectiousness of pneumonia is very marked. It has not at all been proved, he thinks, that a particular germ is the cause of pneumonia. The prognosis depends to a great extent on the previous life history of the patient, as well as on the cause of pneumonia. Pneumonias that occur as terminal conditions are necessarily extremely fatal. The prognosis in a case of mild pneumonia affecting one lobe in a previously healthy and robust person is very good indeed. The prognosis of those patients who are in a class between these extremes is doubtful. Blood examination is a matter of much importance in prognosis.

New York Medical Journal.

May 26.

8 *Bacteriologic Types of Acute Conjunctivitis. (To be continued.) A. Duane and T. W. Hastings, New York.
9 Observations on Fibromyomatous Tumors of the Uterus. J. O. Polak, Brooklyn, N. Y.
10 *Liability of Healthy Individuals Contracting Tuberculosis in Visiting Resorts Frequented by Tuberculosis Patients. J. H. Way, Waynesville, N. C.
11 Tuberculosis of the Kidney. H. H. Morton, Brooklyn.
12 Operative Treatment of Fractures of the Patella. J. H. Gibbon, Philadelphia.
13 Dyspepsia Nervosa. M. Gross, New York.
14 Case of Widespread Intracerebral Sinus Thrombosis. J. E. Talley, Philadelphia.
15 Anterior Metatarsalgia and Its Treatment. S. Epstein, New York.
16 Bilateral Empyema in Children. H. Heiman, New York.

8. **Bacteriology of Conjunctivitis.**—Duane and Hastings report on the findings in 132 unselected cases of conjunctivitis. The following tentative conclusions are drawn, pending a further investigation:

1. There is no special type of conjunctivitis associated with any special germ. The clinical picture, therefore, affords no clue to the germ causing the conjunctivitis.

2. While certain organisms, like the gonococcus, diphtheria bacillus, and streptococcus, usually cause severe reaction, and the other germs regularly produce much slighter effects, this rule has many exceptions, and no sure deductions can be drawn from the intensity of the inflammation as to the germ causing it.

3. Membranous conjunctivitis, as is well known, may be caused by a variety of organisms. It does not necessarily indicate a severe inflammation, nor one that will always produce other evidences of excessive reaction besides the false membrane.

4. In trachoma, particularly trachoma in the stage of acute exacerbation, a variety of organisms may be present. These do not, of course, cause the trachoma, but they are of importance in that they do produce an intercurrent acute conjunctivitis with secretion, which latter serves as a carrier of contagion and thus disseminates not only the conjunctivitis, but the trachoma as well.

5. The *Staphylococcus albus* and particularly the *Staphylococcus aureus* when occurring in the conjunctival sac are sometimes at least pathogenic, and distinctly predispose to the production of corneal lesions. The fact that the *Staphylococcus albus* is probably an almost constant inhabitant of the conjunctival sac, does not invalidate this conclusion.

6. Very mixed infections seem, if anything, to be rather less severe than those in which one germ is the predominant infecting agent.

10. **Liability of Contracting Tuberculosis in Sanatoria.**—After a careful investigation of the danger of visiting places frequented by tuberculous patients, Way has come to the conclusion that non-tuberculous individuals necessarily incur no danger of infection with tuberculosis in visiting or residing at modern health resorts frequented by patients with pulmonary tuberculosis. There is less danger of contracting pulmonary

tuberculosis in a well-regulated modern health resort than elsewhere. Health resorts for tuberculosis are almost invariably places where it has been originally noted that the average of deaths from tuberculosis among the natives was remarkably small. The climatic and other local conditions which originally permitted so small a development of tuberculosis among the natives continues to render them relatively (not absolutely) immune, and as well to beneficially impress the visitors to such resort. Considered in the light of most recent scientific knowledge, it is doubtful if the infective dangers of street expectoration are so great as we have previously believed. The average greater degree of sanitary knowledge and practice prevailing to an extent among all classes at a modern health resort is also highly conducive to the physical improvement and gain shown by the immense majority of visitors to our mountain resorts. The most careful attention to sputum indoors, thorough ventilation, and open air life so much in vogue at the modern health resort for tuberculosis render them safer and should be continued.

Lancet-Clinic, Cincinnati, Ohio.

May 26.

17 *Trigeminal Neuralgia—Surgical Treatment. B. M. Ricketts, Cincinnati.
18 Observations Based on Five Hundred Operations for Appendicitis. T. B. Eastman, Indianapolis, Ind.

17. **Trigeminal Neuralgia.**—Ricketts' paper is an historical résumé of the surgical treatment of this affection.

Bulletin of the Lying-in Hospital of the City of New York.

March.

19 Two Cases of Spina Bifida with Operation. J. W. Markoe, New York.
20 A New Cervical Dilator. R. W. Lobenstine, New York.
21 Case of Hematoma of Vulva Following Normal Delivery. A. B. Davis, New York.
22 *Unusual Case of Hemorrhage in Eclampsia. J. E. Welch, New York.
23 *Maternal Mortality in 32,000 Tenement-House Confinements. J. A. Harrar, New York.
24 Case of Pernicious Vomiting in Pregnancy. J. W. Markoe, New York.
25 Case of Benign Goiter Complicating Pregnancy. W. A. Morgan, New York.

22. **Unusual Hemorrhage in Eclampsia.**—Welch reports the findings in a case diagnosed clinically as eclampsia which exhibited hemorrhagic lesions in the skin and serous membranes, congestion of all the meninges, distension of all the ventricles by fluid blood, a large clot in the left corpus striatum which projected into the left lateral ventricle causing extensive laceration in the substance of the left frontal, parietal and occipital regions. The patient died four hours after admission to the hospital. The autopsy report is published in full.

23. **Maternal Mortality in 32,000 Confinements.**—In the series of cases reported by Harrar the maternal mortality was 0.357 per cent., or about 1 death in every 280 deliveries. The chief causes of death were sepsis, rupture of the uterus, eclampsia and placenta prævia, in the order named. Twenty-seven women, or about 1 in 1,200, succumbed to septic infection. The next most frequent cause of death after sepsis was rupture of the uterus, 15 women having died as the result of this accident. In 5 of these cases rupture occurred as the result of an internal version; in one woman, in whom the cervix had been amputated a year previously, it was produced during a forceps delivery; and in 2 others it was traced to severe falls sustained several days before delivery. Thirteen deaths are accredited to eclampsia, and it may also be noted in passing that this complication occurred 50 times in the series of cases here reported, with a mortality of 26 per cent. Placenta prævia ranks fourth on the list as a mortality factor, there having been 12 deaths from this condition. The 4 cases alluded to account for 67 of the total of 114 deaths from all causes. Lobar pneumonia was fatal in 6 cases, postpartum hemorrhage in 5, premature detachment of the placenta in 4, chronic endocarditis in 4, and phthisis in 4. Four deaths are ascribed to shock and 4 to uremia. Three women died after Cesarean section had been performed. Other causes of death were pulmonary edema, which claimed 3 patients, and embolism and thrombosis, which was fatal in 3 cases. Toxic albuminuria and puerperal toxemia account for 2 deaths. One death was due to chloroform and one each to carcinoma and erysipelas.

Washington Medical Annals, Washington, D. C.

May.

26 Review of the Present-day Therapy of Pulmonary Tuberculosis. B. M. Randolph, Washington, D. C.
27 Case of Septic Endocarditis. S. Rullin, Washington, D. C.
28 Some Eye Cases. R. S. Lamb, Washington, D. C.
29 Surgical Treatment of Complications and Sequels of Pneumonia. W. P. Carr, Washington, D. C.
30 Prostatic Neuroses. E. F. King, Washington, D. C.
31 *Cystinuria with Formation of Calculi. H. A. Fowler, Washington, D. C.
32 Case of Adenocarcinoma of Lachrymal Gland. E. O. Belt, Washington, D. C.

31. **Cystinuria.**—The patient in the case reported by Fowler was a male, aged 67, whose family and personal history were absolutely negative, except for an attack of malaria and one of typhoid, about 30 years previously. His present trouble began about a year ago, when he first noticed a slight increase in the frequency of urination, associated with precipitency. Six months later he began to have sharp pains at the end of micturition. Cystoscopic examination revealed a single large oval calculus with a coarsely granular surface lying on the right side of the trigone. This calculus was removed by a perineal prostatectomy, and a smaller one was passed spontaneously later. Chemical examination showed the calculi to be composed of pure cystin.

University of Pennsylvania Medical Bulletin, Philadelphia.

April-May.

33 Focal Diagnosis of Operable Tumors of the Cerebrum. C. K. Mills, Philadelphia.
34 Ocular Symptoms of Tumor of the Cerebrum. G. E. deSchweinitz, Philadelphia.
35 Surgical Aspects of Operable Tumors of the Cerebrum. C. H. Frazier, Philadelphia.
36 *Study of the Blood in Lead Poisoning, with Description of Bone-marrow of one Fatal Case. W. B. Cadwalader, Philadelphia.

36. **Blood in Lead Poisoning.** Cadwalader made total and differential blood counts in 37 cases of lead poisoning, all the patients presenting typical symptoms and a clear history of having worked in lead for periods of from a few weeks to many months. The hemoglobin and the erythrocytes were reduced to about one-fourth of the normal in most cases, giving an average of about 65 per cent. hemoglobin and 3,850,000 red cells per 1 cm. In every instance there was a marked increase in the number of granular red blood corpuscles. Macrocytes and microcytes were occasionally met with, but poikilocytosis was, as a rule, not marked. One or more normoblasts were found in all but four cases, and megaloblasts in two instances, while in one case 130 normoblasts and 13 megaloblasts were found, while counting 500 white cells, notwithstanding the fact that the total number of erythrocytes was scarcely one-fourth less than the normal. After convalescence was established the nucleated red cells disappeared from the circulating blood before the granular erythrocytes, which slowly decreased in numbers. The total number of red cells very gradually approached the normal. In one case, in which the blood was studied during some length of time, the red cells had only increased 40,000 in four weeks after all symptoms had disappeared, while granular erythrocytes were still easily demonstrated. It would seem as if the intense pallor so characteristic of this condition could not be wholly dependent on so slight an anemia, and may possibly be caused in part by a contraction of the peripheral capillaries, as has been suggested. The leucocytes showed no morphologic changes. The greatest number per 1 cm. was found to be 12,550, while the lowest was 4,700, giving an average of 7,568.

New York State Journal of Medicine.

May.

37 Features and Results of the Treatment and Prevention of Diphtheria by the Use of Antitoxin. H. D. Pease, Albany, N. Y.
38 Somatic Evidences of Syphilis in Paretics. J. M. Winfield, Brooklyn, N. Y.
39 Treatment of Hyperemesis Gravidarum. W. S. Stone, New York.
40 Nosologic Status of Paranoia. W. A. White, Washington, D. C.
41 Simultaneous Extrauterine and Intrauterine Gestation. J. E. W. Whitbeck, Rochester, N. Y.
42 *Detection of Occult Blood in the Feces; a Modification of Boas Test. A. L. Benedict, Buffalo, N. Y.
43 Venereal Diseases in the Navy and Their Prophylaxis. G. E. H. Harmon, Brooklyn, N. Y.

44 Venereal Diseases in the Army and Their Prophylaxis. V. Havard, U. S. A.
45 Medical Teaching of To-day and the Private Quiz. R. C. Newton, Montclair, N. J.
46 History of the Medical Society of the State of New York. (Continued). J. J. Walsh, New York.

42. **Detection of Occult Blood in Feces.**—Benedict employs the following modification of the Boas test. Any convenient quantity of feces is used, say 2 to 5 c.c. of liquid feces, or of more or less solid feces reduced to a diarrheal consistency with water. (Distilled water is not a necessity.) For every 5 parts of liquid feces about one part each of fresh tincture of guaiac and old oil of turpentine is used, and from one to five parts of gasoline. On shaking the blue tint of the positive reaction—or it may be a greenish blue—is communicated to the gasoline. Fats do not interfere with the test, so that no preliminary extraction is necessary. It seems to make no difference in what order the ingredients are added. Ordinarily, to conceal the fecal odor, gasoline is added immediately to the feces, then the guaiac, and finally, the oil of turpentine are poured in and the whole is shaken. The test may be performed perfectly well in an ordinary bottle, even at the house of the patient. Unless several suspicious cases are under observation, the tincture of guaiac is best made fresh, by adding alcohol or wood alcohol to a few whittlings of gum guaiac, so as to produce a yellow solution.

Interstate Medical Journal, St. Louis, Mo.

May.

47 Two Cases Illustrating the Combination of Organic with Hysterical Disease of the Nervous System. S. I. Schwab, St. Louis.
48 Pseudo-Scorbutic Type of Acute Lymphatic Leukemia. J. S. Myer, St. Louis.
49 *Remarks on a Chorionepithelioma in a Male. C. Fisch, St. Louis.
50 Case of Anorexia Nervosa in an Infant. A. Friedlander, Cincinnati.
51 *Abnormal Retention of Dead Ovum. H. Ehrenfest, St. Louis.
52 Submucous Resection of the Nasal Septum for the Correction of its Deformities. W. E. Sauer, St. Louis.
53 *An Aid to the Treatment of Epididymitis. H. McC. Johnson, St. Louis.
54 Abscess of the Liver—Successful Cases in Point. W. Bartlett, St. Louis.

49. **Chorionepithelioma in a Male.** Fisch reports the twenty-first case of this kind recorded in the literature. The patient, a male, 26 years old, applied for relief of an enlarged right testicle that had begun to grow for a period of about 6 months. There was no pain connected with the enlargement, only mechanical inconvenience. The testicle was removed and a microscopic examination showed a typical chorionepithelioma. The patient died about five weeks after the operation, and the autopsy disclosed extensive metastases of the tumor in the lungs, kidney, subperitoneal, bronchial and tracheal glands, one tumor under the scalp of the forehead, and a large metastasis in the white substance of the left posterior frontal lobe, encroaching on the gray matter of the posterior or third frontal convolution. A small tumor was found in the neighborhood of the opening of the carotid canal on the right petrosum. Symptoms of brain tumor were present shortly before the death of the patient.

51. **Abnormal Retention of Dead Ovum.**—In the first case reported by Ehrenfest the dead fetus was retained for about six weeks. In the second case it was retained for about six months.

53. **Treatment of Epididymitis.**—Johnson describes a method which he has employed extensively and with most gratifying results. The parts should first be shaved. With the patient lying on the back one end of a strap of zinc oxid adhesive plaster, two and a half to three inches wide, is applied to the lower abdomen, from one and one-half to two inches from the median line. The strap, face upward, is taken around and under the scrotum, elevating the testicles to a level at least as high as the peno-pubic angle, and forming, as it were, a sling. The other end of the plaster passes up on the opposite side of the median line of the abdomen. A second strap is applied in the same manner as the first, overlapping the latter at its median border by about one inch. The straps are now neatly adjusted about the scrotum. A few short straps are gently passed crosswise over the anterior portion of the scrotum, just below the peno-scrotal angle, completely to cover in the testicles and to enclose them by the plaster, and one crosswise above the penis to aid in holding the longitudinal straps in place. It is intended to make no pressure whatever, and care should be taken that none is made. Both testicles are included in the bandage whether both or one are inflamed. The bandage may be applied at any stage of the attack, but it is especially applicable in the beginning, often cutting short the swelling. If the testicle should swell after this dressing is put on—which, thus far, has not happened in the author's cases—there is ample room toward the penis and perineum to allow of swelling without undue pressure, thus relieving any fear of strangulation. The testicle is thus put in a splint, so to speak, and at the same time the plaster retains the heat and moisture. Patients who come with an epididymis much swollen, saying that they can scarcely walk for the pain, after the application of the bandage, express themselves as much more comfortable. They go about in comfort, attending to their ordinary duties, provided the occupation is not one calling for unusual exercise. The swelling subsides rather rapidly so that within a week or ten days the plaster may be removed and suspensory bandage worn instead.

Surgery, Gynecology and Obstetrics, Chicago.

April.

55 Ureteral Calculus. J. B. Deaver, Philadelphia.
56 *Interstitial Hernia. A. E. Halstead, Chicago.
57 Non-Lithogenous Obstruction of Biliary Ducts. A. H. Cordier, Kansas City, Mo.
58 *Treatment of Varicose Veins. C. H. Mayo, Rochester, Minn.
59 Torticollis. W. W. Richardson, Los Angeles.
60 Four Cases of Hydramnion. C. B. Reed, Chicago.
61 Treatment of Uterine Retrodisplacements. E. H. Grandin, New York.
62 *An Operation for the Cure of Chronic Dilatation of the Stomach. H. J. Donaldson, Williamsport, Pa.
63 *Early Operative Treatment of Osteomyelitis in the Femoral Head and Neck (Hip-Joint Disease). T. W. Huntington, San Francisco.
64 *Arterial Anastomosis by Invagination. E. J. Brougham, Chicago.
65 Methods of Suture in Hernia Operations. M. L. Harris, Chicago.
66 Technic of Median Perineal Prostatectomy. A. H. Ferguson, Chicago.
67 Technic of Vaginal Section. H. T. Byford.
68 Opening and Closure of the Abdominal Wall by the Lower Mesial Incision. J. C. Webster, Chicago.
69 Japanese Navy and Army Sanitation. B. K. Takaki. I. J. N.

56. **Interstitial Hernia.**—Halstead reports one case of strangulated inguino-properitoneal hernia in which reduction was accomplished *en masse*, followed by herniotomy. The second case was one of inguino-interstitial hernia (left-sided) in which a herniotomy was done. Both patients recovered. Halstead urges that operative treatment be instituted in all cases of interstitial hernia, including the properitoneal type, because the wearing of a truss can do nothing but harm.

58. See abstract in THE JOURNAL, Jan. 13, 1906, p. 146.

62. **Chronic Dilatation of Stomach.**—In the case cited, Donaldson performed, with slight modifications, the operation which is known as Weir's modification of Bircher's operation. The surfaces were brought together with Lembert sutures, the opposing surfaces scarified, and the sutures tied and reinforced by a continuous gut suture. Lastly, in the bottom of the first fold which forms the largest dead space a continuous gut suture was introduced, bringing the surfaces together and making a submucous stitch after the first row was tied. By means of the first row of sutures Donaldson enfolded three inches of stomach wall, and by the second row two inches, bringing the two curvatures within about four inches of each other. After two years the stomach apparently is normal in capacity, there has been no return of the gastric symptoms, and the patient is well.

Donaldson emphasizes the following points on which he believes the success of the operation depends: The catgut suture, obliterating the large fold and dead space and pulling up the fold, flattens it out against the surface of the stomach, preventing it from hanging down into the cavity of the stomach, making, by its firmer and broader contact with the opposing serous surfaces, that giving increased nutrition, less danger of ulcer formation. By two rows of Lembert sutures reinforced by continuous suture, there is absolutely no danger of any gaping of the wound, even if one or more sutures prove defective. The careful scarification between the sutures insures excellent and immediate union. The multiplicity of

sutures gives so much strength and firmness that fluids can be given in twelve hours after the operation without fear of injuring the wound.

68. **Operative Treatment of Osteomyelitis.**—The operation referred to by Huntington is one which has been described by him before. A trephine opening about one-half inch in diameter is made on the outer aspect of the thigh, at the lower border of the great trochanter. Through this opening, with a small bone curette, the neck of the femur is tunneled to a depth of from two to two and a half inches. At this depth the epiphyseal cartilage connecting the head and neck will be encountered. If there be any evidence of the focal lesion external to the epiphyseal cartilage, further efforts may be suspended. It is extremely desirable not to interfere with this cartilage, if possible to avoid it, for the reason that such interference will materially affect future development. If it be necessary to enter the head of the bone, either at the time of the initial undertaking or at a later period, this should be accomplished by a small instrument, thereby establishing a channel of communication between the head and neck through which, as a line of resistance, a liquefied focus may find exit.

69. **Arterial Anastomosis by Invagination.**—Brougham reports the case of a boy who received a penetrating wound of the axillary artery, almost severing this vessel, and of the axillary vein. After freeing the ends of the artery from the sheath for about half an inch, the proximal end of the artery was invaginated into the distal end by means of three fine silk sutures. Five additional sutures taken in the overlapping edge of the distal part sufficed to bind it securely to the external surface of the proximal end. The sheath was adjusted over the invagination for double security. The operation wound was packed with iodoform gauze and the entire arm enveloped in cotton. Late in the evening the radial pulse returned. The patient made an uninterrupted recovery. At no time was there edema of the arm or any evident disturbance of the circulation. The axillary vein was ligated.

American Medicine, Philadelphia, Pa.

April.

70 *Action of Quinin on the Tertian, Quartan and Aestivo-Autumnal Malarial Plasmodia. (To be concluded.) C. F. Craig, Manila, P. I.
71 Tuberculosis of Bursæ and Tendon Sheaths. J. C. Stewart, Minneapolis.
72 Contamination of Milk at the Dairy. A. H. Stewart, Philadelphia.
73 *End Results in Appendicitis Work. E. A. Balloch, Washington, D. C.
74 Timidity. (To be concluded). M. K. Isham, Cincinnati, Ohio.
75 Results of the Radium Treatment of Cancer. C. MacFarlane, Philadelphia.
76 *Staining of Spirochæta Pallida (Treponema Pallidum) in the Tissues of a Case of Congenital Syphilis. O. T. Schultz, Cleveland.
77 Resuscitation by Means of Direct Massage of Heart in Syncope After Chloroform Anesthesia and Other Cases of Sudden Death. F. Woodbury, Philadelphia.
78 Hysteric Hemiplegia. A. Gordon, Philadelphia.

70. **Action of Quinin on Malarial Plasmodia.**—The study undertaken by Craig for the purpose of determining the actual effect of quinin on the various forms of the malarial plasmodia, and the best time for the administration of the drug, show that quinin acts on every stage in the growth of all the varieties of the plasmodia, but that its action is most marked on the free spores and on the young intracorpuscular forms, in the latter often not preventing entirely the development but producing very marked developmental changes. In tertian malaria quinin is effective on all but the segmental bodies, and therefore exercises its curative action whenever given, whether in one large dose just prior to segmentation, or in undivided doses. The effect of quinin on the quartam plasmodium is practically the same as its effects on the tertian in all stages of its development, hence the effect of the drug is most apparent when it is administered in divided doses given at regular intervals, thus keeping the blood full of quinin all the time. Craig's observations on the estivo-autumnal parasite have not yet been completed.

73. **End Results in Appendicitis Work.**—Balloch believes: (1) The appendix is a rudimentary organ, a part of the cecum, undergoing obliteration, and so far has not been shown to be in any way a necessary part of the human economy. (2) Reasoning from the results of operation in cases of chronic and quiescent appendicitis, the removal of the appendix in the course of operations for other conditions is justifiable. (3) The difficulty of determining from microscopic examination whether an appendix is diseased or not, is an argument in favor of the removal of the organ. (4) The fact that deaths have occurred that might have been avoided had the appendix been removed at the first operation is an unanswerable argument in favor of the practice advocated in this communication, viz., that the appendix should be removed as a routine measure in abdominal work, provided always, that its removal will not prejudice the chances of the patient for a smooth recovery.

76. **Spirochaeta Pallida.**—Schultz reports a case of hereditary syphilis in which this organism was found in sections from the various organs. The case from which the material was derived was a female infant which died on the fourth day after birth of acute lobar pneumonia. The mother gave an indefinite, but probable, history of syphilitic affection contracted after the beginning of her pregnancy.

American Medicine, Philadelphia, Pa.

May.

80 Action of Quinin on the Tertian, Quartan, and Aestivo-Autumnal Malarial Plasmodia. (Concluded). C. F. Craig, Manila, P. I.
81 Tent Sanatorium for Consumptives. W. Hutchinson, Redlands, Cal.
82 Resection of the Infraorbital and Supraorbital Nerves for Eyestrain. G. M. Gould, Philadelphia.
83 Maggots in Renal Calculus; Cystic Kidney with Obliterated Ureter and Fibroid Uterus Causing Chronic Distention of Bladder with Retention of Urine. J. H. Gibbon, Philadelphia.
84 Nephrectomy Followed by Pregnancy and Labor. C. P. Noble, Philadelphia.
85 Timidity. (Concluded.) M. K. Isham, Cincinnati, Ohio.

Therapeutic Gazette, Detroit, Mich.

May 15.

86 Abduction Treatment of Fracture of the Neck of the Femur. R. Whitman, New York.
87 Fracture of Neck of Femur. D. Willard, Philadelphia.
88 Diagnosis and Non-surgical Treatment of Fractures of the Neck of Femur. O. H. Allis, Philadelphia.
89 Treatment of Fracture of the Neck of the Femur. W. J. Taylor, Philadelphia.
90 *Calomel in the Treatment of Eclampsia. W. R. Wilson, Philadelphia.
91 Etiology and Treatment of Mastoiditis. S. M. Smith, Philadelphia.

90. **Calomel in Eclampsia.**—Wilson reports 6 cases of eclampsia in which the use of calomel was attended by good results, except in 1 case. In the first case 10 grains were given immediately after delivery. There were no further convulsions and the urine became normal in quantity in less than 48 hours after delivery. There was no salivation. In the second case, 20 grains of calomel were given in 2 grain doses, frequently repeated, with the same result as in the previous case. The third patient had her first convulsions during the third stage. There were 11 convulsions in all. The patient was given 15 grains of calomel within 30 hours. The fourth patient was given 20 grains of calomel after the first convulsion, which occurred during the third stage. There were no more convulsions, nor was there any need for the use of sedatives. The fifth patient had convulsions immediately after labor began. Following a podalic version and extraction she had two more convulsions, with increasing coma, and after an interval of three days another convulsion occurred. (No mention is made of the amount of calomel administered in this case.) The sixth patient, an alcoholic, was first seen in coma which followed three convulsions. Death occurred 30 hours after delivery from pulmonary edema. Thirty-five grains of calomel had been given in doses of 5 and 10 grains.

Wilson urges that calomel should be energetically administered both in the pre-eclamptic stage and in the stage of convulsions. An initial dose of 10 grains, followed in 15 hours by an equal dose, is indicated in the first instance. In the convulsive stage an initial dose of 20 grains, followed by half this amount in the intervals between convulsions, as the opportunity arises, or in accordance with the ability of the patient to swallow, is indicated. If the patient is somnolent or if the convulsions follow each other in quick succession, the maximum dose, 25 grains, should be administered at the first opportunity. In cases in which a pre-existing kidney lesion is present smaller doses may be given frequently—two grains every six hours.

Texas Medical News, Austin.

April.

92 Two Fatal Cases of Anthrax. H. A. Barr, Beaumont.
93 Counter Prescribing. D. Monroe.
94 Continued Malarial Fevers. A. S. Garrett, Springtown, Texas.
95 Trachelorrhaphy. E. Lanphear, St. Louis, Mo.

Bulletin of the American Academy of Medicine, Easton, Pa.

April.

96 Report of Committee to Tabulate the Academic Value of the First Degree. W. S. Hall, D. C. Hawley, W. J. Barlow, C. H. Van Pelt, and C. McIntire.
97 Report of Committee on the Teaching of Hygiene in Public Schools. (Continued).

The Philippine Journal of Science, Manila, P. I.

April.

98 Principal Insects Attacking Coconut Palm (Part II). C. S. Banks, Manila.
100 Studies on Experimental Variola and Vaccinia in Quadrumana. W. R. Brinckerhoff and E. E. Tyzzer, Boston.

The Laryngoscope, St. Louis, Mo.

April.

101 *Submucous Resection of the Septum. W. L. Ballenger, Chicago.
102 Technic of Submucous Resection of the Septum. S. Yankauer, New York.
103 Submucous Resection of the Nasal Septum with Ballenger's Swivel Knife. J. F. McCaw, Watertown, N. Y.

101. See abstract in THE JOURNAL, Oct. 7, 1905, p. 1112.

Iowa Medical Journal, Des Moines.

May 15.

104 Thrombosis of Right Middle Cerebral Artery with Symptoms and Autopsy. H. J. H. Hoeve, Des Moines.
105 Medical Progress. E. Hornibrook, Cherokee.
106 One Week's Work with Hyoscin-Morphin Anesthesia. E. Lanphear, St. Louis.

Mississippi Medical Monthly, Vicksburg.

May.

107 President's Address to the Mississippi State Medical Association, April 17, 1906. E. H. Martin, Clarksdale.
108 Fevers Seen in the Delta. E. A. Cheek, Arcola.
109 Case of Erysipelas. L. B. Sparkman, Cleveland.

Virginia Medical Semi-Monthly, Richmond.

May 11.

110 Rheumatism—Acute and Chronic, Rheumatoid Arthritis and Rheumatic Arthritis. J. C. Walton, Chase City.
111 Alkaloidal Medication. W. F. Waugh, Chicago.
112 A Case of Obstetrics. C. S. Webb, Bowling Green.
113 Acute Lymphatic Leukemia. H. S. Holloway, Jacksonville, Fla.
114 Value of Medical Examinations. R. D. Garcin, Richmond.
115 Clinical Cystoscopy. D. L. Hirschler, Norfolk.
116 Traumatic Sciatica. J. V. Shoemaker, Philadelphia.
117 Prophylaxis and Care of the Puerperal Breast. W. A. Plecker, Hampton, Va.
118 Extemporaneous Asepsis. W. A. Gills, Richmond.

Northwest Medicine, Seattle, Wash.

May.

119 Intramuscular Injections in Treatment of Syphilis and Use of the Sozoiodolate of Mercury. (To be concluded). A. Garceau, San Francisco.
120 Chronic Gastric Ulcer, Frequency, Pathology and Diagnosis. A. A. Matthews, Spokane.
121 Delayed Transportation of Stomach Contents, Symptoms and Differentiation of Causes. E. M. Rininger, Seattle.

Medical Age, Detroit, Mich.

May 10.

122 Paresis. C. P. Bancroft, Concord, N. H.
123 Evils of Cocain. Q. W. Hunter, Louisville, Ky.

Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis.

May 15.

124 Compound Fractures. E. A. Hensel, Alexandria.
125 Septic Endocarditis. H. L. Staples and W. M. Chowning, Minneapolis.
126 Carbolic Acid in Modern Surgery. J. C. Stewart, Minneapolis.
127 Technic of Extirpation of Faucial Tonsil. F. C. Todd, Minneapolis.

Detroit Medical Journal.

May.

128 Dermatologic Malingering. H. R. Varney, Detroit.
129 Therapeutics of Acute Nephritis. C. G. Jennings, Detroit.
130 Etiology of Peritonitis. P. S. Root, Monroe.
131 The Morning Drop; Its Significance and Treatment. W. A. Hackett, Detroit.
132 Cerebral Abscess. H. C. Wyman, Detroit.
133 Anesthesia for Brief Surgical Procedures. C. S. Oakman, Detroit.

Texas State Journal of Medicine, Fort Worth.

May.

134 Necessity for Better Reciprocal Relations Between the Medical Profession and the Public. J. E. Gilcreest, Gainesville, Texas.
135 Individual Scholarship. M. L. Moody, Greenville.

The Medical Standard, Chicago.

May.

136 Notes from Nothnagel's Clinics. G. B. Hassin, Chicago.
137 Hepato-Ptosia, Coloptosia and Enteroptosia in Splanchnoptosia. B. Robinson, Chicago.
138 Syphilis. V. V. Hunt, Blackwell, O. T.
139 Practical X-Ray Therapy. (To be continued). N. M. Eberhart, Chicago.

Denver Medical Times.

May.

140 Treatment of Fatty Heart. H. W. McLauthlin, Denver.
141 Id. E. Stuver, Ft. Collins.
142 Fatty Degeneration of the Heart. W. J. Rothwell, Denver.
143 Treatment of Fatty Degeneration of the Heart. A. S. Taussig, Denver.
144 Treatment of Fatty Heart. F. P. Gengenbach, Denver.
145 Osteoplastic Operation on the Lower Jaw. E. J. A. Rogers, Denver.
146 A Few Remarks on Pneumonia. G. F. Butler, Chicago.
147 Ocular Symptoms in General Diseases. E. W. Stevens, Denver.
148 Laboratory Diagnosis for the Practitioner. J. C. Todd, Denver.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

May 12.

1 Autointoxication; Its Relation to Certain Cardiovascular Disorders. H. B. Shaw.
2 Eucalyptus Poisoning. J. Orr.
3 Importance of Anesthesia by Lumbar Injection in Operations for Acute Abdominal Diseases. H. P. Dean.
4 *Spirochæta Pallida and Its Variations. A. Maclennan.
5 *A Fatal Case of Acute Cardiac Beriberi. H. Wright.
6 Dionin in Ophthalmic Practice. J. Hinshelwood.
7 Local Anesthetic Action of Stovain. D. McKenzie.

4. **Spirochaeta Pallida.**—Maclennan is of the opinion that the name *Spirochæta pallida* denotes only one stage in the history of an organism, while *Cytorrhyctes luis* probably denotes another, so that another name will be required for the protozoan found with, or as the cause of, syphilis. He suggests that it is also possible—if not, indeed, probable—that there is more than one organism responsible for the series of symptoms included in syphilis. It is a striking fact, he says, that the symptoms of syphilis during the roseolar stage are so slight, yet the blood and tissues are more or less contaminated by hordes of micro-organisms. Such symptoms as are present are not likely, therefore, to be due to a toxin elaborated by these germs, but to the germs themselves.

5. **Acute Cardiac Beriberi.**—A postmortem examination was held on the case reported by Wright, and careful culture experiments were conducted. A very suspicious bacillus was found, similar to one recovered from the stools in other cases of acute beriberi. A full report of these findings is given. All the media inoculated from the contents and scrapings of the stomach and duodenum showed growth by the end of twenty-four hours. Plates were made from all surface colonies, but no organism was seen which corresponded with that found in the mucosa of the stomach and duodenum. In the glucose-agar stabs there was found, in almost pure culture, a bacillus which corresponded morphologically and in staining reaction with that found in the gastric and duodenal mucosa. At twenty-four hours the bacillus ranged from 4 to 8 or 9 microns in length, and was 1.05 microns in breadth. The ends were almost square and the sides regular, but slightly curved. Older cultures were longer, stouter, and tended to become clubbed. The patient died in the seventh week of the disease from cardiac failure. The train of events during life were an acute onset with complaint of gastrointestinal symptoms, followed or accompanied by other symptoms that marked the effect of the beriberi virus on the cardiac and vasomotor nervous systems.

The Lancet, London.

May 12.

8 Autointoxication: Its Relation to Certain Disturbances of Blood Pressure. H. B. Shaw.
9 *Case of Primary Intestinal Anthrax in Man; Septicemia; Hemorrhagic Leptomeningitis. J. H. Teacher.
10 Technic of Colon Irrigation in a Case of Appendicostomy for Colitis. W. Ewart.
11 Two Unusual Cases of Difficult Labor. H. T. Hicks.
12 *Invisible Surgery. J. L. A. Aymard.
13 Bronchopneumonia and Pyemia. I. McKenzie.

9. **Primary Intestinal Anthrax.**—Clinically the case reported by Teacher was one of an acute illness terminating fatally within twenty-four hours, the prominent features of which

were headache, cerebral irritation manifesting itself in restlessness, delirium, and finally convulsions. There was also slight abdominal tenderness which might have suggested peritonitis, but there was no pyrexia. The history afforded no hint as to the nature of the disease. At the postmortem examination the case presented the features of an acute septicemia and early peritonitis which appeared to spread from a hemorrhagic lesion of the small intestine with ulceration and necrosis internally and signs of an infective process extending up the mesentery. The nervous phenomena were explained by the discovery of a diffuse hemorrhagic condition of the pia-arachnoid, which microscopic examination demonstrated to be an early meningitis due to the anthrax itself. The identity of the organism was proved by cultivation and inoculation experiments. The intestinal lesion was clearly the oldest, and the conclusion appears warranted that the case was one of anthrax septicemia due to intestinal infection caused most probably by the ingestion of a quantity of anthrax bacilli or spores in the stools.

12. **Invisible Surgery.**—Aymard describes a skin incision for which he claims that a permanent visible scar is not left. His method consists in dividing the skin on the slant in contradistinction to the present method of dividing it at right angles to the surface. The scar is present, but is hidden away. The knife should make one clean sweep down to the fascia, which in turn should be divided as far under the face of the upper flap as possible, and on no account should the lower flap be dissected off this fascia. The upper flap is enclosed in a warm, dry, sterile link and secured far back with tissue forceps. The lower flap being retracted, the fascia is treated in a similar manner and the operation for which the incision is made is proceeded with in the usual way. Aymard seldom uses a suture, but when he does he passes a lance-shaped, slightly curved needle threaded with horsehair through the skin on a slant at a little distance from one extremity of the wound; it then passes through the base of the upper and the apex of the lower flap continuously, its point of exit being through the skin on the slant at the other extremity of the wound. The suture is not tied and is removed at the end of forty-eight hours.

The object is to stretch the delicate apex of the upper flap, and the best plan is to press this edge gently between the finger and thumb, the lower flap at the same time being stretched and placed in position with suitable forceps. The accuracy of the apposition should be tested with a magnifying glass. The subsequent object of dressing is to keep this edge, together with the rest of the flap, in accurate flat apposition, remembering that undue pressure may cause damage. Sometimes he secures the wound by placing across it a few strips of china silk and collodion, at others by merely placing collodion on the curved or flat glass dressing. He prefers glass to celluloid or mica because it is rigid and prevents contraction of the flap.

Journal of Tropical Medicine, London.

May 1.

14 Tinea Imbricata in Brazil. U. Paranhos and C. P. Leme.
15 Mosquito Notes. G. M. Giles.

Glasgow Medical Journal.

May.

16 Laparotomy in Tuberculous Peritonitis. D. MaCartney.
17 Recent Cystoscopes, with Special Reference to Inspection of the Ureteral Orifices. J. H. Nicoll.
18 Mechanism, Diagnosis and Treatment of Persistent Occipito-Posterior Presentations. A. W. Russell.
19 *Three Cases of (So-called) Double Uterus. G. S. MacGregor.

19. **Double Uterus.**—Macgregor reports 3 cases of this kind seen by him and makes an analysis of 100 cases occurring in the literature. Of these 100 patients 30 were unmarried, while 70 were married women. Two out of the 30 unmarried women had had abortions. Of the 70 married women, 14 were non-parous, while 56 were parous; of these 56, 14 aborted and 44 went to full time. From these 44 women there were 96 children, while out of the labors of these there were 2 Cesarean sections, 2 hysterectomies, 4 forceps cases and 36 normal labors. In only 71 cases is there any reference to menstruation; 58 patients were regular, 8 were irregular, while 5 had amenorrhea and 13 dysmenorrhea. In 38 cases there is noted the size of each uterine horn; in 17 cases the left was the larger, the right was the larger in 13 cases, in 8 they were equal, while one was an infantile uterus didelphys. It is evident that the presence of such malformations does not materially lessen the chances of impregnation, except when the genital canal is completely occluded at some point, and that delivery usually occurs without any special danger or difficulty, except when the fetus is held in the rudimentary horn of a markedly double uterus. In such a case there is danger of rupture of the uterine wall; or there may be no dilatation of the imperfectly developed cervical canal; or, again, it may be a powerless labor from the lack of sufficient contractile force in the uterus itself.

Presse Médicale, Paris.

20 (XIV, No. 31.) Asphyxia from Illuminating Gas.—Fermez vos becs. A. Martinet.
21 Les diurétiques de la série xanthique. A. Martinet.
22 De la suture des nerfs. P. Reclus.
23 *De la sénilité. A. Létienne.
24 (No. 32.) *Quelques considérations sur l'aortite syphilitique. Dieulafoy.
25 Les paralysies de l'épaule à volonté et la loi sur les accidents de travail (voluntary paralysis of shoulder). E. Brissaud and F. Moutier.
26 *Camptodactylie. Stigmate organique précoce du neuro-arthritisme. L. Landouzy.
27 *Technique de la néphropexie. J. Albarran.
28 Les cancers primitifs de l'ampoule de Vater. M. Letulle.
29 La leucoplasie de la vulve, du vagin et de l'utérus. F. Jayle and X. Bender.

23. **The Senile Heart.**—Létienne remarks that the heart is the organ which is generally most affected by senility, but the symptoms suggesting its inferiority are usually masked by others which seem foreign to this organ. It may struggle along for years handicapped by the unsuspected senile changes, and succumb at last abruptly. The fulminating end is apparently very sudden, but the struggle has been going on for years. The most common signs of senile changes in the heart are shortness of breath and fatigue. There is no real pain, but merely a disinclination to make an effort. If the effort is made it is followed by rheumatoid pains in the muscles involved. Rest banishes the pains, but they return at the next effort and may become permanent in time. They may be accompanied by slight dizziness, unstable balance, possibly even ocular troubles or actual angor, which cease during rest but recur at the slightest fatigue. General nervous troubles may be observed, taking the form of indolence or disinclination for the accustomed brain work. The nervous system requires rest like the muscles and demands it imperiously by recurring periods of somnolence. On the other hand, sleep at night is interrupted by waking frequently, or there may be actual insomnia. Slight gastric disturbances may also be observed. None of these symptoms points to the heart, and the only sign of the underlying trouble is possibly slight swelling of the ankles at night or after a long walk, and the composition of the urine. All the constituents of the urine will be found notably reduced in amount, although generally retaining their proportional values.

24. **Syphilitic Aortitis.**—Dieulafoy relates 3 striking examples of syphilitic angina pectoris of extreme severity and persistence for years rapidly cured by daily injections of from 0.5 to 2 c.c. of mercury biniodid in an aqueous solution. He keeps up the injections for ten or twelve days at a time, with intervals of two weeks or a month. Mercurial inunctions had failed to relieve in one case and the patient was in a condition similar to the *état de mal* of epilepsy, the attacks being practically continuous. The biniodid seems to have a remarkably prompt and efficient action on the symptoms. One patient was so much improved that he is now—seven years later—working on a farm, no one in the district being able to compete with him in endurance, although the physical signs of aortic insufficiency still persist.

26. **Early Sign of Tendency to Nervous and "Rheumatic" Affections.**—Landouzy refers to an irreducible inward flexion of the ring and little fingers, generally of the right hand. It is impossible to straighten them out voluntarily. This little sign, he says, permits the physician to divine the past of his patient, to judge of his temperament, and to augur his future. It is a sign of "neuro-arthritism"—nutritional sluggishness.

and may be observed early in life or may develop later, especially after some infection. It reveals the kind of defensive reactions that may be anticipated in case of disease. It has led Landouzy in many instances to prophesy congestive or nervous troubles at puberty, and in case of incipient tuberculosis in such young people, to announce that the disease would probably assume more of a bronchitic form, with spasmodic asthma, or slight recurring hemoptyses or attacks of tachycardia. The course of the disease in such individuals is more inclined to be inflammatory.

27. **Technic of Nephropexy.**—Albarran gives an illustrated description of the technic with which he fastens the kidney to the lower rib and muscle wall.

Semaine Médicale, Paris.

30 (XXVI, No. 19.) Typhlite et perityphlite (without appendicitis). F. Lejars.

Beiträge z. klin. Chirurgie, von Bruns', Tübingen.

Last indexed, page 1147.

31 (XLVIII, No. 2.) Embryologic Study of Accessory Passages in Penis.—Ueber die Entwicklungsgeschichte einiger accessorischer Gänge am Penis. A. Lichtenberg.
32 *Zur Lehre vom Cardio-Spasmus. F. Brüning.
33 Die Dermoide des Samenstrangs (seminal cord). L. Wrede.
34 *Treatment of Acute Inflammations with Artificially Induced Hyperemia— Behandlung akuter Entzündungen mit Stauungshyperämie. H. Rubritius.
35 *Ueber Milz-Exstirpation wegen Milzverletzung (splenectomy for injury of spleen). W. Noetzel.
36 *Ueber die Operation der Leberverletzungen (injuries of liver). Id.
37 *Die Roentgen-Behandlung des Kropfes (of goiter). C. Pfeiffer.
38 Zur Pathologie des congenitalen, partiellen Riesenwuchses (giant growth). M. Hofmann.
39 Veraltete, komplete vorder-Arm-Luxation nach aussen geheilt durch Arthrotomie. O. Klauber.
40 Ueber die äusseren Fisteln bei angeborener Atresia ani s. recti und ueber die Darstellung des kongenital verschlossenen Rectums im Roentgen-Bilde. A. Läwen.
41 *Ueber die sogenannte akute Pancreatitis und die Ursachen des schweren, oft tödlichen Verlaufes derselben (cause of fatal course). G. Doberauer.

32. **Spasmodic Contraction of the Cardia.**—Brüning describes a case in detail, with the resulting disturbances and the benefit derived from operative treatment. The patient was a young man and as the disturbances from the dilated esophagus were serious, the cardia was stretched with Mikulicz forceps introduced through an opening into the stomach. It required some force to conquer the spasmodic contraction, but it was finally stretched to a diameter of 6 cm. A tube had been passed into the stomach through the mouth and out through the opening made in the stomach. The lower end of the tube was slit into halves for a short distance, and one of these halves was tied to each branch of the forceps. The forceps could then be drawn up into the cardia as the tube was drawn up through the mouth. The single stretching answered the purpose. In acute cardiospasm, painting the mucosa of the cardia with a 3 per cent. solution of cocain has proved effectual in some instances. In the chronic cases the cocain has given only transient benefit, not affecting the purely functional spasm. It is sometimes possible to cure an incipient tendency by changing the diet, restricting the patient to fluid foods for a time. No benefit has been derived to date from electricity. Feeding through the stomach sound has benefited many patients. In the case described this was kept up for two months, supplemented by rinsing out the esophagus and application of electricity. This improved the patient to such an extent that he felt comparatively free from disturbances for two years, but then they returned in a more serious form than before. The spasmodic contraction never returned after the cardia was finally stretched.

34. **Treatment of Acute Inflammation with Passive Congestion.**—Rubritius reports the experience at Wölfler's clinic at Prague with Bier's method of passive congestion. Nearly 125 patients were thus treated and the results were highly satisfactory in cases of suppuration in a tendon sheath, abscess, felon, etc., and especially so in mastitis. The final verdict is that Bier's method of "congestive hyperemia" is extremely useful in the treatment of acute suppurative processes, but is liable to do harm in case of existing general infection. In an experience with 3 cases of this kind and in 3 reported in the literature, existing general infection seemed to be aggravated by the passive congestion. Symptoms of general infection or the finding of bacteria in the blood should contraindicate this method of treatment. [The second edition of Bier's book, "Hyperemia as a Curative Agent," 1905, is already exhausted and a third edition is now being prepared. He states that

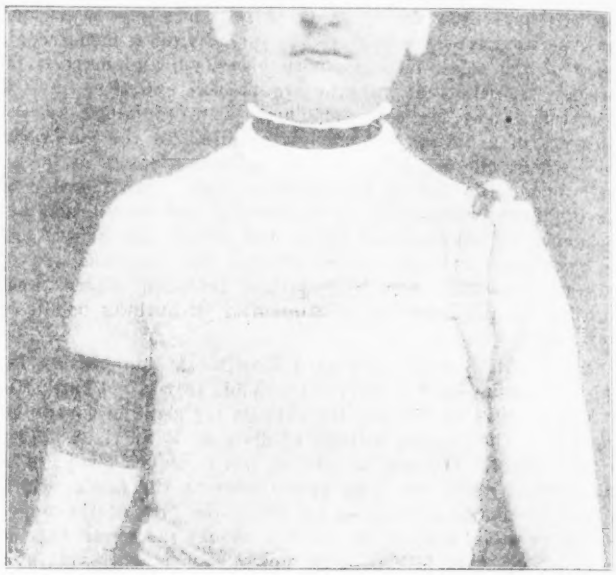

Figure 1.

from lack of space in the new edition he refrains from touching on the value of artificial hyperemia in the treatment of cutaneous affections, although his experiences in this line have been remarkably favorable. The various devices used to induce passive congestion at his clinic have recently been described and illustrated anew in the *Zeitft. f. aerztliche Fort-*

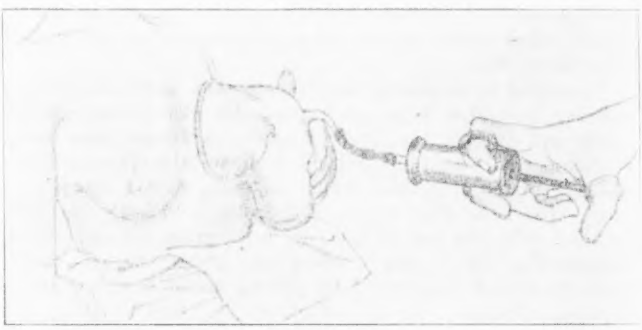

Figure 2.

bildung, Nos. 7 to 9. The article is by R. Klapp of his clinic, who reiterates that the constricting band should not cause any discomfort in itself, and that the sensations in the congested area should be merely those of congestion without any prickling or "going to sleep" in the part. The limb should feel warm, even warmer than the sound side. The skin should

Figure 3.

look bluish red, and the pulse should be distinctly felt. In case of acute inflammation the limb blushes up to the constricting band and generally swells considerably, while the pre-existing pain gradually subsides. In case of a chronic affection, or with merely brief artificial hyperemia, the congested area does not swell much and it does not grow much if any

warmer. Bier has always advocated the use of simple, generally home-made devices, for application of superheated air, for the elastic constricting bands and for his suction cups. Figure 1 shows the constricting bands as applied to the arm, shoulder and neck. For the shoulder a rubber tube is sewed into a ring. Figure 2 shows the suction cup used for mastitis with a syringe pump or rubber bulb. Figure 3 shows the cup used for boils, abscesses, etc. At the Hamburg surgical clinic the constricting bands are applied on out-patients, without medical supervision. They are told to take them off at once if they begin to hurt.—ED.]

35. **Splenectomy for Injured Spleen.**—Noetzel reviews the history of 6 patients whose spleens were removed on account of injury of the organ. He did not notice any symptom specially characteristic of such injury, but signs of irritation of the peritoneum from effusion of blood demanded prompt intervention. He also found that severe pain at the point of injury invariably accompanied serious damage within. In one of the cases the early intraperitoneal hemorrhage stopped spontaneously, but commenced again the third day, requiring operative measures. He discusses the best technic for splenectomy judging by the outcome of his cases. It is the only means of arresting hemorrhage from the injured spleen. Suture and tamponing may arrest it for a time, but there is always great danger of recurrence of the hemorrhage, as occurred in some of his cases.

36. **Operative Treatment for Injuries of Liver.**—Noetzel here describes 8 cases of injury of the liver in which an operation was performed in less than four hours in all but one, in which the interval was ten hours. His experience shows the advantage of suturing the wound in the liver whenever it is at all possible. He sutures through a tampon to prevent bleeding later. He has recently examined 3 of the patients after an interval of from several months to two and a quarter years, and found them all entirely well and free from disturbances of any kind.

37. **Roentgen Treatment of Goiter.**—Pfeiffer describes the experiences with Roentgen treatment of goiter at von Bruns' clinic at Tübingen. The particulars of 51 cases are given and the histologic findings in 8, with the results of experimental research. The general conclusion is to the effect that Roentgen treatment of goiter is ineffectual as a rule and should not supplant the better tried methods.

41. **Cause of Death in Acute Pancreatitis.**—Doberauer analyzes the clinical histories of 6 cases of acute pancreatitis and summarizes his experiments on 35 dogs. The course of the clinical cases and the findings in the dogs indicate that the diseased pancreas generates toxins which are extremely injurious. He was able to cause the same symptoms in dogs as those observed in human acute pancreatitis by tying off the vessels in the pancreas and isolating it. The pancreas soon showed signs of fat necrosis, subserous hemorrhage and hemorrhagic effusion into the peritoneal cavity, and the animals rapidly succumbed. Injection of fragments of the diseased pancreas into healthy animals caused the same fatal syndrome in the latter. The diseased pancreas evidently undergoes an autodigestion with the generation of extremely toxic elements which are rapidly absorbed by the peritoneum irritated by the presence of the digestive juices. His experiences further suggest the possibility of rendering dogs immune to this toxin by injections of normal and then of small amounts of the diseased pancreas.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

42 (XXXII, No. 12.) Action of Preparations Containing Tubercle Bacilli on Tuberculous Organism.—Experimentelle Studien ueber die Wirkung von Tuberkelbacillen-Präparaten auf den tuberculös erkrankten Organismus. A. Wassermann and C. Bruck.
43 *Ueber traumatischen Morbus Brightii. C. Posner.
44 *Early Diagnosis and Treatment of Laryngeal Cancer.—Zur Frühdiagnose und Behandlung des Kehlkopfkrebses. B. Baginsky.
45 *Ueber prämenstruelle Temperatur-Steigerungen. G. Riebold. (Concluded.)
46 Die galvanokaustische Sonde für den Tränenkanal (lachrymal canal). M. Peschel.
47 Eine seltenere Erkrankung am Knie (rare knee affection). L. v. Lesser.
48 *Eine neue Harnprobe auf Santonin (test for santonin in urine). Neuhaus.
49 Der Wortzeichenschutz für Arzneimittel (trade mark name for medicines). L. Lewin.
50 Pathogenesis of Cancer.—Ehrlich's Vortrag ueber Pathogenese des Krebses.
51 (No. 13.) Zur kriegschirurgischen Bedeutung der neuen deutschen Infanterie-Munition. Kranzfelder and Oertel.
52 *Zur Behandlung der Lungen Phthise mit künstlichen Pneumothorax (artificially induced). A. Schmidt.
53 *Transmission of Syphilis to Monkeys.—Versuche zur Uebertragung der Syphilis auf Affen. IV. Siebert, Schucht and A. Neisser.
54 *Experimentelle Untersuchungen ueber die Infektiosität des syphilitischen Blutes (blood). E. Hoffmann.
55 *Radium Treatment of Skin Affections.—Wirkungsweise und Anwendbarkeit der Radiumstrahlung und Radioaktivität auf die Haut mit besonderer Berücksichtigung des Lupus. P. Wichmann.
56 Zur Behandlung des Heufiebers (hay fever). M. Berliner.
57 Zur Lokal-Anästhesie in der Ohrenheilkunde (in otology). J. Hechinger.
58 Aspirator for Nose.—Ein neuer Nasensauger. C. Leuwer.

43. **Traumatic Bright's Disease.**—Posner discusses the questions suggested by the case described. A girl of 11 had scarlet fever, but was otherwise healthy until she reached her twenty-third year. She then fell from a horse car and immediately experienced violent pain in the right side which recurred repeatedly. A tumor became evident and was recognized as the displaced kidney. Two years passed without essential improvement from the supporting bandage ordered. Six months later, while the pains still continued, albuminuria was observed. It was of the cyclic type at first, but after another six months pains developed also on the left side, the albuminuria became constant and signs of chronic inflammation of both kidneys became apparent.

44. **Early Diagnosis and Treatment of Laryngeal Cancer.**—This article is a postgraduate lecture and outlines the present status of the subject. Total extirpation, Baginsky says, has become a less dangerous operation than it used to be, and the after-treatment has been much improved, but, even at the best, the mutilation is great. The physician must bend all his efforts to early diagnosis and exert his influence to have the growth removed in its incipiency.

45. **Premenstrual Increase of Temperature.** Riebold calls attention to the fact that in many women, just before the menstrual discharge appears, the process of ripening of the follicle is accompanied by an increased activity in all the vital processes, so that at this time a violent storm sweeps over the organism. In healthy women there does not seem to be any special disposition to acquire disease during this period, although digestive disturbances are frequent. An already diseased organism is especially liable to contract new infections at this time. Any disease already present may become aggravated during the premenstrual period. There is frequently a rise in temperature at this time, generally due to absorption from some old infectious focus or to exacerbation of the underlying affection. This premenstrual fever is observed frequently but not exclusively in tuberculous women, and never in entirely healthy women. Franck has recently asserted that premenstrual fever is an indication that something is wrong somewhere in the organism. It may be necessary to take the rectal temperature in order to detect minimal premenstrual fever.

48. **Test for Santonin in Urine.**—Fehling's solution turns the urine dark green and, in larger amounts, dark purple, in case of the presence of santonin.

52. **Artificial Pneumothorax in Treatment of Pulmonary Tuberculosis.**—Schmidt describes a combined trocar and cannula with which he has been injecting gases or fluids into the pleural cavity. He does not yet publish his therapeutic results, but merely describes his technic. He evidently thinks it promises well.

53. **Transmission of Syphilis to Monkeys.**—Neisser's experiments on monkeys have been frequently mentioned in these columns. In this fourth part of his official report he states that fresh syphilitic growths, even the tertiary, induce primary sores when inoculated into monkeys. It is immaterial whether these tertiary manifestations occur in an early or at a very late stage of the syphilitic infection. The inoculations are always positive so long as the growths are not destroyed by necrosis or suppuration. When there is specific granulation-degeneration of the tissues or suppuration then the inoculations are never successful. He warns that every tertiary man-

ifestation should be regarded as contagious even although the danger of infection is much less than in case of the primary and secondary manifestations. His findings also suggest the necessity for several thorough, intermittent courses of mercurial treatment for every syphilitic in the tertiary stage. The primary and secondary lesions are particularly dangerous, as they are located at the points which are most liable to come into close contact was other individuals. These points are, also, particularly liable to excoriation (lips, interior of the mouth, etc.). On account of the latter fact, the lesions are especially liable to be mistaken for harmless excoriations. The tertiary lesions from which the positive inoculations were made were always those with intact skin above them. Some were on patients who had acquired their syphilis from ten to fifteen years before. Neisser's examinations of children with inherited syphilis have convinced him that their bodies swarm with parasites which can pass by way of the blood into the organs. Inoculation with mucus from the nose of such a child produced a primary sore on a monkey in one case. Inoculation with the blood and tissues from various organs was also always positive. In 2 of the 3 cases described in detail the children were apparently healthy for several weeks before anything suspicious of syphilis developed. Nothing in the history of the parents suggested any suspicion of the disease. It may be possible to detect the syphilis in such cases much earlier by examination of the blood or secretions for spirochetes.

54. **Contagiousness of Syphilitic Blood.**—Hoffmann also reports experiments with monkeys which have confirmed the contagiousness of the blood during the early stage of syphilis. The virus is present in the blood in an attenuated form, probably, as only part of the experiments resulted positively.

55. **Radium Treatment of Cutaneous Affections.**—Wichmann reports the experience at the Hamburg Lupus Institute with radium. He found that the larger part of the rays are absorbed in the cutis and that pathologic tissues absorb more than the sound. The action on the surface is too intense, while the underlying tissues do not feel the effect of the radiation enough. He suggests that it might be possible to overcome this difficulty by filtering the rays and increasing their deep action by supplementing them with injections of radio-activated fluids. He has found radioactive barium sulphate excellent for the latter purpose.

Jahrbuch für Kinderheilkunde, Berlin.

Last indexed, page 1735.

59 (LXIII. No. 3.) *Ileus bei Kindern. Volvulus flexuræ sigmoidea. W. E. Tschernow.
60 *Die osmotische Konzentration der gebräuchlichsten Säuglingsnahrungen (of infants' foods). Helene Stoeltzner.
61 Zur Frage der Pasteurisation der Säuglingsmilch (of milk). T. Zelenski.
62 *Mors thymica bei Neugeborenen (in the newly born). E. Hedinger (Berne).
63 Zur Kenntnis des Intubations-Traumas. C. Zuppinger.
64 Die operative Behandlung jugendlicher Krüppel (youthful cripples). E. Reichard.
65 (No. 4.) Die Ernahrung mit "Holländischer Säuglingsnahrung," ein Buttermilch-Gemisch; Dauerpräparat (buttermilk preparation that will keep). H. Koeppe (Giessen).
66 *Untersuchungen ueber die Pädatrophie. C. E. Bloch.
67 *Zur Kenntnis der Pneumokokken-Arthritis im ersten Kindesalter (in infants). H. Herzog (Heidelberg).
68 Ueber Verbreitung und Wirkung des Alkohols bei Schülern (liquor drinking by school children). R. Hecker (Munich).
69 *Diffuses Ekzem; Herztod (heart failure). H. Rehn.

59. **Volvulus of Sigmoid Flexure in Children.**—Tschernow reports 3 cases. Two were in lads of 10 and one in a girl of 4. The condition is very rare in children under 15, but is so frequent after 20 that Treves is cited to the effect that 2,000 persons die annually from this cause in England alone. One of Tschernow's 3 patients succumbed to the ileus. The girl was relieved of the acute symptoms of occlusion, but the trouble was evidently due mainly to a congenital dilatation of the colon. The sigmoid flexure and mesentery were unusually long, allowing the flexure to form a loop which caused trouble in the passage of feces but no occlusion, as the loop was rounding and not a sharp peak. In Boeckel's case the rounding loop was twisted a quarter around on its axis. The symptoms are those of ileus in general. Indicanuria indicates obstruction in the intestines and may aid in the diagnosis. Other symptoms are due to the resulting autointoxication.

60. **Osmotic Concentration of Infants' Foods.**—Stoeltzner urges study of the osmotic concentration of the foods and stomach content of infants. It is almost certain that osmotic processes play an important part in the digestive processes.

62. **Sudden Death from Enlarged Thymus in Infants.**—Hedinger's previous communications on "thymus deaths" were recently reviewed in these columns, page 1484. He has found evidences of hyperplasia of the thymus in the cadavers of 17 infants. In some the thymus alone was unusually large, while in the others there was also thyroid hyperplasia, although not to such a degree as to have suffocated the child. In all these cases, as also in those on record, the children either did not recover from their asphyxia after birth or else, after a few hours of apparently normal breathing, respiration ceased abruptly. In the cases reported by Somma the children did not succumb until the third or fourth day, after several attacks of suffocation. Hedinger gives an illustration of a deformed, hemicephalous child who lived twenty-four hours. The thymus was extremely large, measuring 7.5 by 6.5 cm. and 4 cm. thick. The suprarenals were extraordinarily small. The findings in all these cases differed in several important respects from those characteristic of the status lymphaticus.

66. **Idiopathic Atrophy in Infants.**—Bloch supplements his former communications on this subject by reporting the pathologic anatomic findings in 6 cases of idiopathic atrophy of infants under 8 months. They demonstrate that the primary cause of this condition, as also of certain forms of chronic dyspepsia (without catarrh of the intestines), is defective functioning of the serous digestive glands.

67. **Pneumococcus Arthritis.**—Herzog remarks that the 3 cases of this condition which he has had occasion to observe in infants certainly demonstrate that the joints at this early age are predisposed to pneumococcus infection the same as other serous membranes, the pleura, peritoneum, pericardium and meninges. Without a preceding lung affection, it is rare in adults. Only 4 are known in 55 cases in adults; 11 in 28 cases in infants under 2, and 5 in 8 children from 2 to 14. The only effectual treatment is by extensive arthrotomy, carefully saving the ligament apparatus. The tendency to multiple abscesses must not be forgotten. The deposits of fibrin—"nests for the pneumococci"—must be carefully removed. Defects in the cartilage and bone must be curetted and the wound drained for two or three days. The function of the joint is seldom permanently impaired. Detachment of the epiphysis has been observed in neglected cases, but there is no actual sequestrum formation. The clinical picture observed in Herzog's 3 cases included extreme pallor of the skin, especially of the face, notwithstanding the irregular fever. The appetite, digestion and sleep did not seem to suffer much. The joint was swollen, sometimes the entire limb, and it was hot and sensitive to pressure. Sometimes the joint was abnormally movable. A characteristic feature is the absence of circumscribed redness when all other signs point to an inflammatory process. He based his diagnosis on this feature in one instance. When there is redness it indicates that the process has involved the tissues around the joint. The pneumococcus pus is generally a greenish yellow, not fetid, but creamy, with a tendency to fibrin formation. Endocarditis has never been observed in connection with the arthritis in infants. The general symptoms are much milder than in case of staphylococcus arthritis. Exploratory puncture will differentiate the affection from tuberculosis, etc. Gonorrheal arthritis in infants resembles more the pneumococcus affection, but other signs of gonorrheal infection are seldom lacking. There is little edema and the pus is thin and serous. The article concludes with a bibliography of 108 titles on pneumococcus arthritis.

69. **Diffuse Eczema; Heart Failure.**—An apparently healthy child of 16 months, with diffuse eczema with much exudation, was brought to Rehn for relief from the itching. He prescribed a 2 per cent. ichthyol salve and in a week the eczema had improved to such an extent that there was no more itching, and the child's appetite and sleep were good. This improvement lasted for two weeks, when the eczema flared up again with fever. It subsided under cool compresses and aluminum acetate with 0.1 gm. phenacetin internally morning

and evening. These measures were followed by application of 5 per cent. ichthyol salve, under which the eczema and the general health rapidly improved. The mother reported five days later that the child had no appetite. There was no fever and no edema. The lymph glands around the right ear were enlarged, evidently the result of suppurating eczematous patches in the outer ear. The next morning Rehn was hastily summoned to the child, who was in collapse; the heart action was weak and irregular. The child died in less than two hours. There were no evidences of status lymphaticus, but there was fatty degeneration of the heart, liver and kidneys. Streptococci and staphylococci were found in the blood of the heart.

Monatsschrift f. Geb. u. Gynaekologie, von Rosthorn's, Berlin.
Last indexed, page 1655.

70 (XXIII, No. 3.) *Right of Child to Life at Birth.—Wie weit soll das Recht des Kindes auf Leben bei der Geburt gewährt werden? B. Krönig (Freiburg).
71 *Die Mortalität beim engen Becken einst und jetzt (contracted pelvis in the past and present). K. Baisch (Tübingen).
72 *Laktation und Menstruation. K. Heil (Darmstadt.)
73 Fall von schwerem Tetanus uteri und Spasmus orificii interni. W. Rühl.
74 *Hebotomie oder Symphyseotomie? H. Sellheim (Freiburg).
75 (No. 4.) *Anatomische Untersuchungen ueber die Grundlagen für die Leistungsfähigkeit der weiblichen Brustdrüse (anatomic basis for mammary secretion). Engel (Dresden).
76 *Salt Starvation in Dropsy of Pregnancy.—Chlornatrium-Entziehung bei Hydrops graviditatis. H. Cramer (Bonn).
77 Riesenwuchs beim Neugeborenen (macerated fetus weighing 6,550 gm.). G. Schubert.
78 Adenoma malignum portionis. W. Schidkowski.
79 *Zur Prophylaxie und Radikaloperation postoperativer Ventral-Hernien. A. Schütze (Königsberg).
80 Ueber Leber- und Nieren-Echinococcus in der Gynaekologie (of liver and kidneys). D. von Velits.
81 *Statistische und anatomische Ergebnisse bei der Freund-Wertheimschen Radikal-Operation des Uterus-Karzinoms. R. Schindler (Graz). (Commenced in No. 2.)

70. **Right of Child to Life at Birth.**—Krönig discusses the question of how far obstetricians are justified in imperiling the mother to save the child. He quotes Zangemeister to the effect that the obstetrician is justified in performing operations in the interests of the child if they have generally a mortality of not over 2 per cent. He analyzes the 135 cases in his own experience in which children died during delivery, out of a total of 3,133 births. In 40 instances death was due to protracted birth and consequent asphyxia of the child, the soft parts being contracted and the head twisted. In 23 cases there was placenta prævia, in 18 prolapse of the cord and strangling, and in 22 cases the mother's pelvis was contracted. He is convinced that with more active measures some of these children might have been saved. Reviewing his own and the experience of others, he has found that the prognosis for the mother of symphyseotomy and Cesarean section is scarcely any more unfavorable than that of craniotomy, granted good technic and asepsis. The maternal morbidity of craniotomy is also higher than is generally assumed. Prophylactic version and artificial premature delivery have a larger mortality for the mother than is generally recognized, and they reduce the mortality of the children very little if at all. He advocates more extensive resort to pelvis-enlarging operations or Cesarean section, provided the birth canal can still be regarded as aseptic. If the mother is already infected, Cesarean section is almost inevitably fatal, unless infection of the peritoneal cavity can be prevented. During 1905, 440 children weighing over 2,500 gm. were delivered at his clinic, with 11 deaths. Two at least of these children might possibly have been saved if an operation to enlarge the pelvis had been undertaken earlier. One of the children succumbed during the serious collapse of the mother in consequence of lumbar anesthesia.

71. **Past and Present Mortality in Case of Contracted Pelvis.**—Baisch compares statistics from various clinics to learn the causes of the mortality for mothers and children when the pelvis is deformed. The practical conclusions of his study are that it is a grave mistake to suppose that artificial premature delivery, prophylactic version and high forceps will accomplish the desired purpose when the pelvis is too much contracted to allow the passage of a living child. The mortality from expectant treatment in such cases is not so high as from these operative measures. Zweifel and Döderlein have abandoned them altogether, and yet their mortality is lower than that of others who still cling to these measures. In conclusion Baisch asks if it might not be advisable to substitute external cephalic version in case of transverse presentation, for the classic podalic version. He advises against trusting too long to expectant treatment in case of too protracted delivery. The widespread dread of the forceps is perhaps exaggerated. Forceps and version are contraindicated, however, when the head has failed to move downward at all. The entrance of the head into the pelvis might be favored by hebotomy (pubiotomy or extramedian symphyseotomy).

72. **Lactation and Menstruation.**—Heil's article is based on 200 cases. His experience has been that about half of all nursing women menstruate regularly. He is almost tempted to believe, for reasons which he cites, that the menstruating nursing women represent the normal healthy type.

74. **Hebotomy or Symphyseotomy.**—Sellheim contributes anatomic, clinical and experimental researches to aid in deciding the question as to the superior advantages of these two operations. The balance is still undecided.

75. **Anatomic Bases for Secretion of Milk.**—Engel points out that the defective development of the specific glandular parenchyma of the mamma may be responsible for the inability of certain women to nurse their babies. The external form and palpation findings do not permit of reliable conclusions as to the functional capacity of the mammary glands. Every breast, even the defectively developed ones, contain more or less of the secreting parenchyma, and in every case it should be pressed into service for the feeding of the infant. The mothers with little of this secreting parenchyma should be encouraged to keep it continuously at work so that their infants can at least profit by partial breast feeding if the mothers are not able to feed them entirely.

76. **Reduction of Salt in Treatment of Dropsy of Pregnancy.**—Cramer regards the edema that develops in the course of pregnancy, and also the varices, as a manifestation of the autointoxication of pregnancy. The walls of the vessels are affected by some disturbance in metabolism, the result of autointoxication. The dropsical tendency can be successfully combated by reduction of the intake of salt, as his experience in 5 typical cases has demonstrated. The patients did not eat salted foods, the bread was baked without salt, and all food containing salt was avoided, including milk and meat. On a diet of eggs, puddings, cereals, vegetables and fruits the existing dropsy rapidly retrogressed and the patients lost weight constantly until their normal weight was reached. One of his patients had a fetus in each half of a double uterus, delivery proceeding nearly simultaneously in each but quite independently, although requiring some help. This patient exhibited symptoms toward the end of the pregnancy which indicated the existence of eclampsia, although there were no convulsions. He thinks that we must accept the existence of eclampsia without convulsions as a well-defined morbid entity, and even without edema or albuminuria. His experience further demonstrates that the edema of the legs observed during pregnancy is a static accumulation of fluid when the dropsy has reached a certain degree. He was unable to detect any injurious influence from the "salt starvation" treatment on the development of the children, and regards the benefit observed after reduction of salt in the diet in the dropsy of pregnancy as a very promising fact. The measures ordinarily applied, sweats, diuretics, etc., have more or less of an effect on the heart or general health of the patient, while reduction of salt in the food is harmless, simple and easy, even for the poorest.

79. **Postoperative Ventral Hernia.**—Schütze declares that a well-made suture of the fascia after a laparotomy ensures positively against postoperative hernia. The best technic for the suture is what he calls the "Vienna suture," with an antiseptic (Turner) silk. In case of postoperative hernia, he has found the Karewski technic of treating it harmless and extremely satisfactory. The earlier it is done the better the results. The Karewski technic was briefly described in THE JOURNAL, xliv, page 665, 1905.

81. **Statistical and Anatomic Study of Results of Operations for Uterine Cancer.**—Schindler's extensive article re-

views what has been written on the results of the Freund-Wertheim radical operation for carcinoma of the uterus. He presents all the evidence and the results of 117 operations at Gratz.

Muenchener medizinische Wochenschrift.

82 (LIII, No. 11.) Einige Studien ueber Reflexe, besonders an 116 Hemiplegikern. Graeffner.
83 *Die Behandlung akuter und chronischer Eiterungen mit Phenol-Kampher (for suppuration). C. Ehrlich.
84 Deformities in Extremities Due to Amniotic Bands—Ueber Extremitätenmissbildungen. E. Schwalbe.
85 *Eine sehr empfindliche Reaktion auf Gallenfarbstoffe (bile pigments). A. Krokiewicz.
86 Anthrax of Larynx.—Milzbrand des Kehlkopfes. E. Glas.
87 Zur Diagnose der Extrauteringravidität durch Röntgen-Strahlen. F. Lichtenstein.
88 *Fall geheilter Magen-Perforation (of stomach). v. Zezschwitz.
89 *Vaccine Affection of Eye.—Ueber Vakzineerkrankung des Auges. L. Alexander.
90 Therapie des Tonsillen-Abszesses. G. Sommer.
91 *Pregnancy and Delivery After Vaginal Cesarean Section.—Ueber den Verlauf von Schwangerschaft und Geburt nach vorausgegangenem vaginalem Kaiserschnitt. Rühl.
92 Improved Appliance for Agglutination Test.—Bluttupferröhrchen zur Erleichterung der Gruber-Widalschen Reaktion. E. Czaplewski.
93 Die neurogene und myogene Theorie des Herz-Schlags (of heart beat). E. Mangold. (Concluded.)
94 Historisches zur Frage des Einzelkelches beim Abendmahl (individual communion cup). A. Martin.

83. Carbolic Acid and Camphor in Treatment of Acute and Chronic Suppuration.—Ehrlich has adopted Chlumsky's method of treating suppuration with a mixture of 30 parts carbolic acid, 60 parts camphor, and alcohol to 100 parts. It was described in THE JOURNAL, Nov. 4, 1905, page 1453. Ehrlich confirms all Chlumsky's assertions in regard to the simplicity, harmlessness and effectiveness of this method of treating all kinds of inflammations. It does not require trained assistance, and his experience in 96 cases of felons, phlegmons, leg ulcers, furunculosis, erysipelas, tuberculous fistulas and infected wounds of all kinds, was extremely favorable. He applies the mixture on a loose tampon, without an impermeable covering, and found the length of treatment very much shorter than by other methods. There were no disagreeable by-effects. Among the examples cited was the case of a soldier with a tuberculous fistula in his neck which had resisted treatment for months. Under phenol-camphor treatment the fistula healed in twelve days. In another case an old leg ulcer on a soldier healed under three applications. The relief from pain and the feeling of warmth suggest that the benefit may be due to artificial hyperemia as in Bier's passive congestion, but the latter technic requires trained supervision, which is unnecessary with the phenol-camphor dressings. A folded mull compress impregnated with the phenol-camphor is placed around the focus and dry cotton over it, the whole held by a loose bandage. When the focus is incised a strip of mull impregnated with the mixture is introduced into the opening.

85. Sensitive Reaction for Bile Pigments.—Krokiewicz reports that later experience has confirmed more and more the extreme delicacy of his test for bile pigments. The reagents used are 1 per cent. aqueous solution of sulphanilic acid and also of sodium nitrite, and pure hydrochloric acid. He mixes 1 c.c. each of the two solutions together and then pours out all but 0.5 c.c. The same amount of the fluid to be examined is added. In case of the presence of bile pigments it turns red and, on addition of a drop or two of hydrochloric acid, a permanent violet. In 1,000 different tests with urine after ingestion of various drugs and in other conditions the reaction was never positive except in the presence of bile pigments. The reaction also can be obtained with as little as from 2 to 10 drops of the fluid to be examined.

88. Spontaneous Cure of Perforation of Stomach.—The patient described was an artist of 46 who had complained for some time of symptoms suggesting a possible ulcer in the stomach. Indications of perforation developed, treated by absolute rest, very hot applications to the region for several hours, and then ice. Although the high temperature and the serious condition of the patient seemed to impose surgical intervention, yet his constitution and a family history of tuberculosis, and signs that the peritonitis was becoming circumscribed justified delay and recovery proceeded smoothly. A year later there were evidences of fixation of the transverse colon and of its adhesion to the abdominal wall and liver.

89. Vaccine Affection of Eye.—Alexander reviews the literature on the subject of vaccine affections of the eyes, mouth, genitals, etc. He reports a case in which a child had probably scratched a vaccination pustule and inoculated itself on the face, eyelids, right hand and arm so that other pustules developed. He urges prophylaxis of such occurrences.

91. Pregnancy and Delivery After Vaginal Cesarean Section.—Rühl relates the details of 4 cases in which he delivered women in a pregnancy subsequent to vaginal Cesarean section. No disturbing influence from the operation could be discovered. In one case the rigidity of the cervix had been the reason for the obstetric operation, and this rigidity interfered also with the later delivery. In another case a cicatricial adhesion fastened the uterus to the broad ligament, and this had to be severed before the uterus was able to enlarge normally, but this band was the result of old inflammation, not of the obstetric operation.

Nordiskt medicinskt Arkiv, Stockholm.

Last indexed, page 1245.

95 (XXXVIII, Internal Medicine, No. 4.) Present Status of Crusade Against Tuberculosis.—Ueber den derzeitigen Stand der Tuberkulosebekämpfung. Robert Koch. Address on Receiving Nobel prize.
96 *Ueber experimentelle Leukocytose. Kier.
97 *Die Cytologie der Pleura- und Peritoneal-Ergüsse (effusions). H. Köster.
98 Traitement de la tuberculose par le sérum antituberculeux de Marmorek. E. Levin.

96. Experimental Leucocytosis.—Kier asserts that in rabbits there are always more leucocytes proportionately in the peripheral vessels than in the central, except that the portal vein always contains a large proportion of leucocytes. The fastening of the animals, the anesthetic, and any slight operation affects the number of leucocytes, and the leucocytosis of digestion, in rabbits, is always very pronounced. These facts must be borne in mind in experimental studies of leucocytosis in these animals.

97. Cytology of Pleural and Peritoneal Effusions.—Among the results of this extensive study of the subject may be mentioned the fact that lymphocytes predominated in 80 per cent. of the tuberculous effusions, while in the inflammatory exudates of other than tuberculous or rheumatic origin, the polynuclear leucocytes predominated in 80 per cent. and the lymphocytes were comparatively rare. In cases of carcinoma the endothelial cells predominated in 63.4 per cent., but lymphocytes were also present in large numbers in 11 out of the 41 cases.

NEW PATENTS.

Recent patents of interest to physicians:

818814. Vaginal syringe. Martin L. Bosworth, Bristol, R. I.
818618. Massage apparatus. George B. Fraley, Philadelphia, Pa.
818953. Obstetrical instrument. John G. Gottlieb, Fessenden, N. D.
818446. Truss. George V. House, Mount Vernon, N. Y.
818888. Truss. Elihu Hovey and M. M. Black, Albion, Mich.
818858. Ammonia still. Burchard Thoens, New York.
818583. Machine for forming sacks for suspensory bandages. Justin K. Toles, Chicago, Illinois.
819704. Apparatus for reoxygenating exhaled air for respiration purposes. Max Bamberger, F. Bock, and F. Wanz, Vienna, Austria-Hungary.
819498. Massage implement. James Barker, Philadelphia, Pa.
12477. Reissue, Sanitary syrup-receptacle for soda-water fountains. Frederick H. Hecker, Los Angeles, Cal.
819458 Vibrator-applicator for and connection therefor. Clarence H. Richwood, Boston, Mass.
819459. Applicator for mechanical massage. Clarence H. Richwood, Boston, Mass.
819383. Treating surgical articles. Austin V. M. Sprague, New York, N. Y.
819392. Gas-administering apparatus. Walter N. Wayman, Staunton, Va.
819330. Hypodermic syringe. Osvaldo A. Yeaza, Guatemala, Guatemala.
820082. Artificial leg. John T. Apgar, New York.
819972. Bottle indicator. Washington H. Bixler, Easton, Pa.
819975. Pelvical belt or band. Guglielmo Bracco, Sr., Turin, Italy.
820106. Indicator for bottles. Frank A. Frkovic, Galveston, Texas.
820004. Fecal-analyzer. James A. MacMillan, Detroit, Mich.
819901. Medicated pencil. Charles S. Maschal, Kingston, N. Y.
820753. Electrical vibratory motor. James L. Adams, Jr., Springfield, Ill.
820845. Obstetrical forceps. Lyman G. Barton, Willsboro, N. Y.
820853. Truss. Harvey Eagon, New Comerstown, Ohio.
820576. Automatic dose-measuring bottle or vessel. Arthur W. Hutchins, Providence, R. I.
820720. Capsule-filler. Hubert King, New York.
820656. Ozone-ventilator. Frederic de Mare, Brussels, Belgium.
820724. Capsule closing and printing machine. Victor Meilberg, Newark, N. J.
820728. Truss. Thomas O'Malley, McKeesport, Pa.